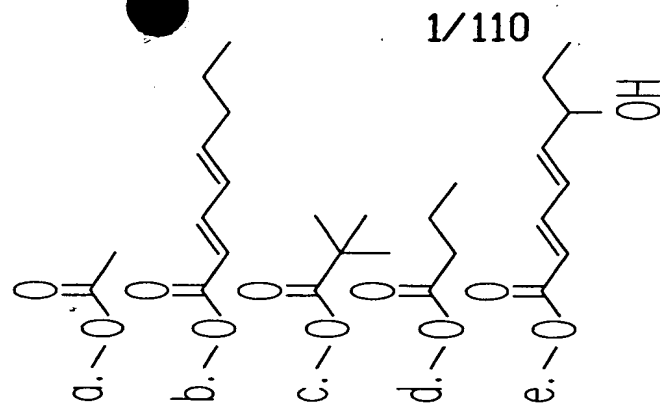
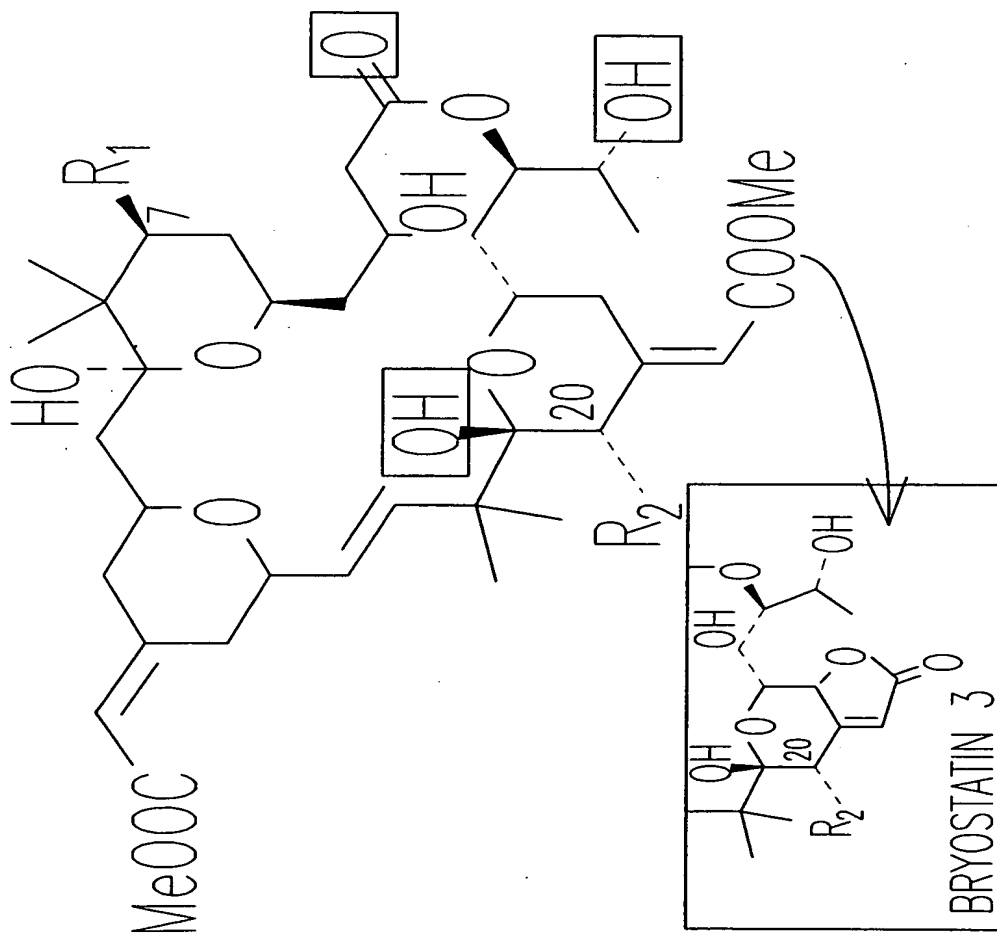


BRYOSTATIN SUBSTITUENTS

	R_1 R_2	
1	a	b
2	OH	b
12	d	b
15	a	e
4	c	d
5	c	a
6	d	a
7	d	a
8	d	a
9	d	a
10	a	d
11	c	H
13	d	H
14	c	H
16	c	OH
17	c	H
18	c	H



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Fig. 1

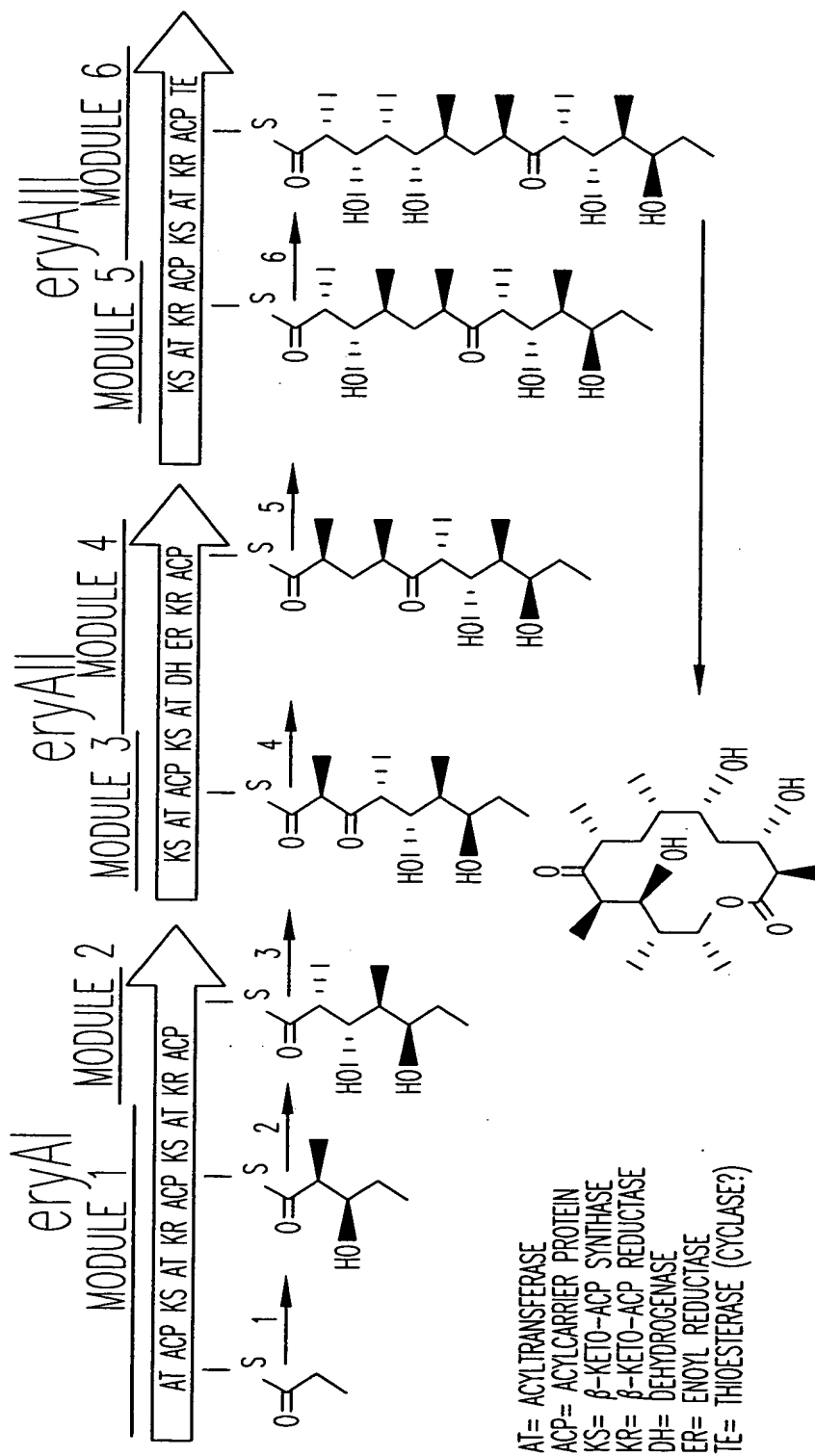


Fig. 2

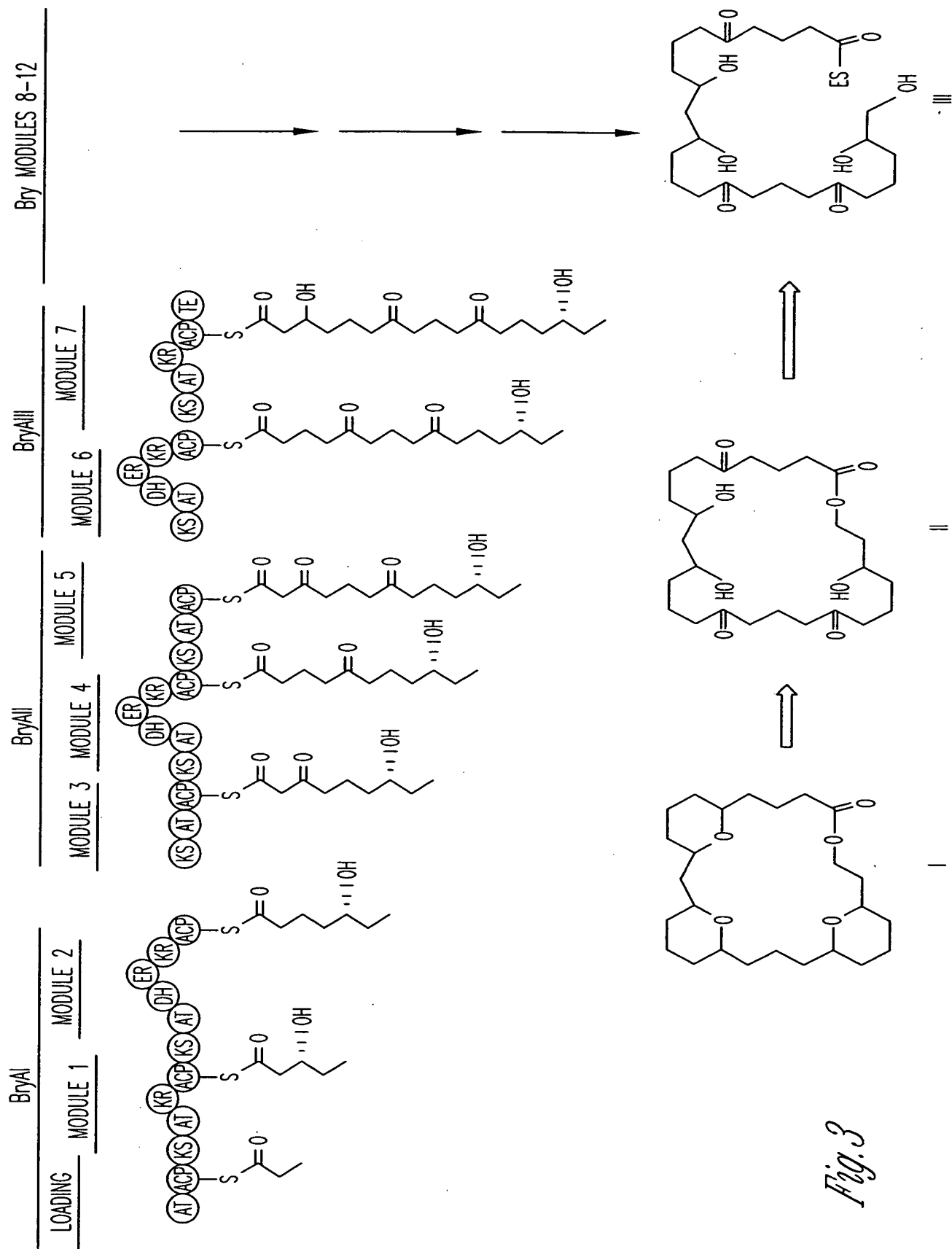
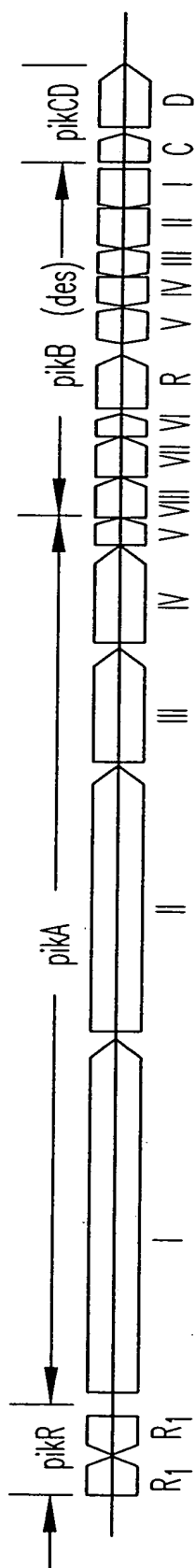


Fig. 3



GENE REPLACEMENT IN THE S.VENEZUELAE CHROMOSOME TO EXCHANGE
pik PKS GENES WITH bry PKS GENES

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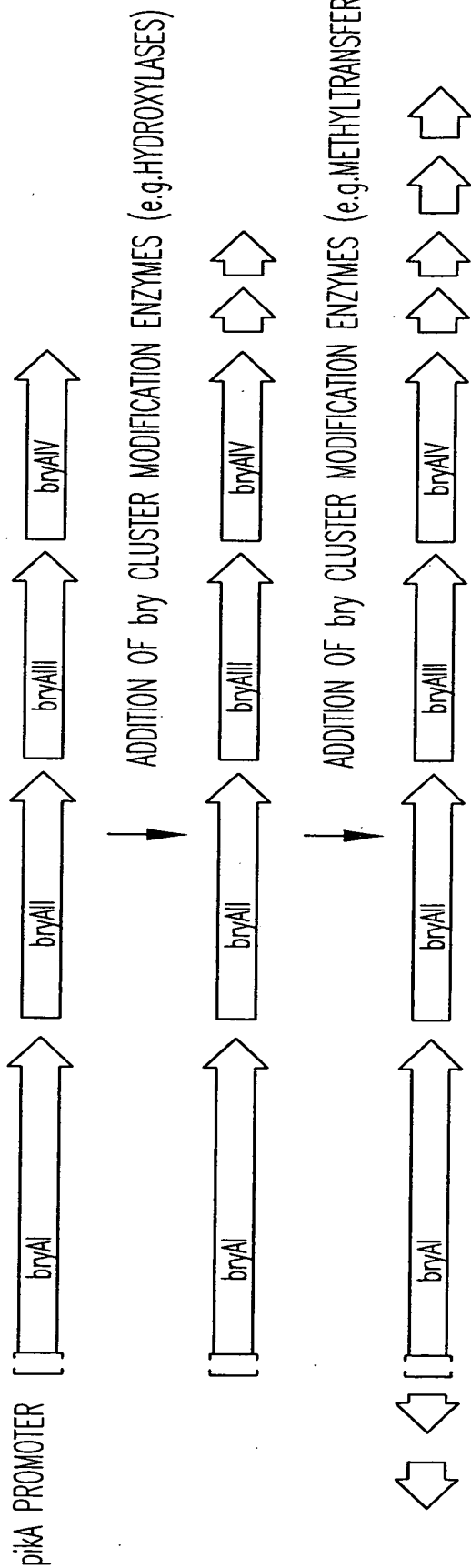
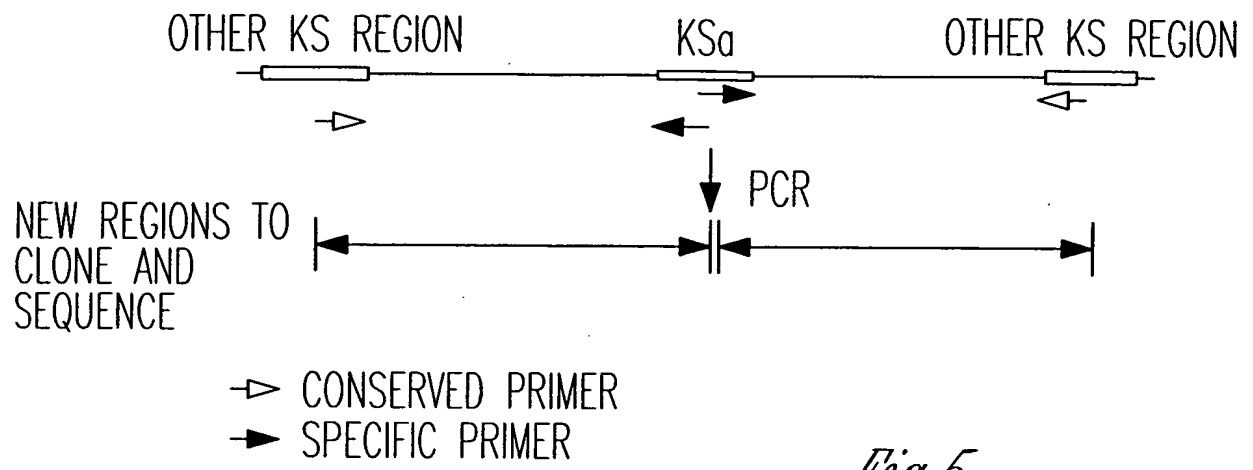


Fig. 4

*Fig. 5*

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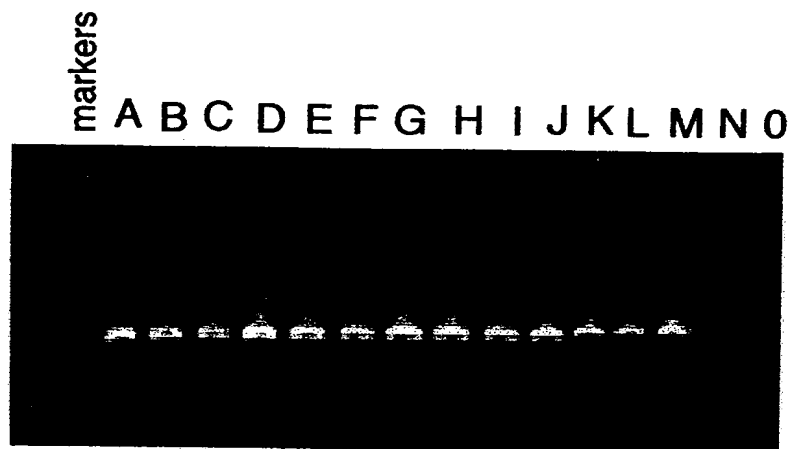


FIG. 6

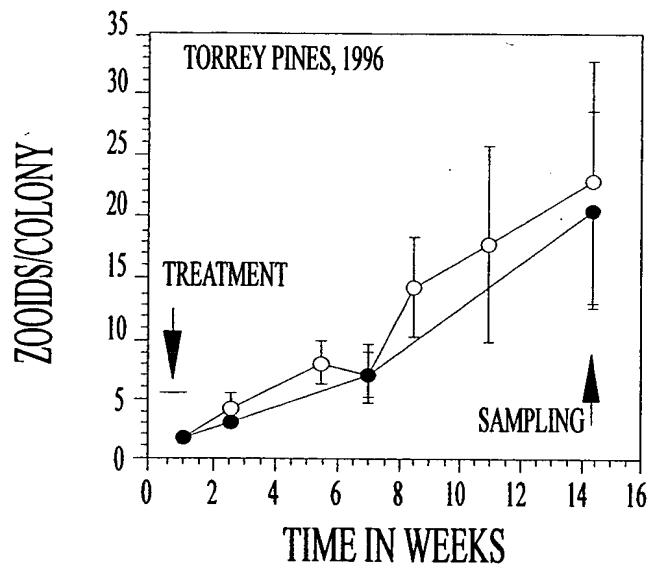


FIG. 7A

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Control Treated



DGGE

FIG. 7B

Control Treated



KSa Amplification

FIG. 7C

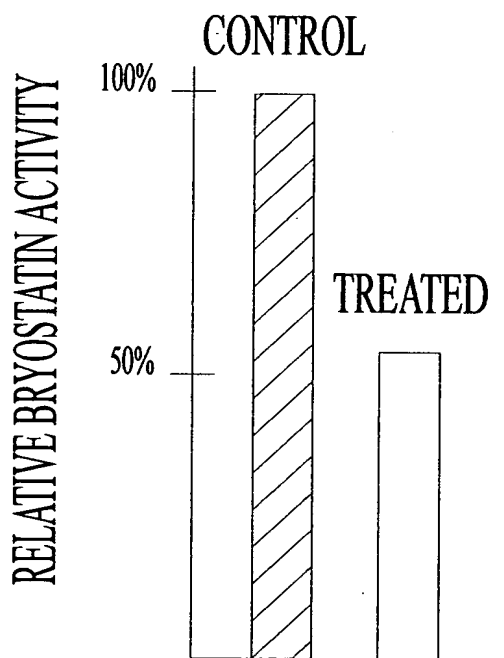


FIG. 7D

FIG. 7D "8255460"

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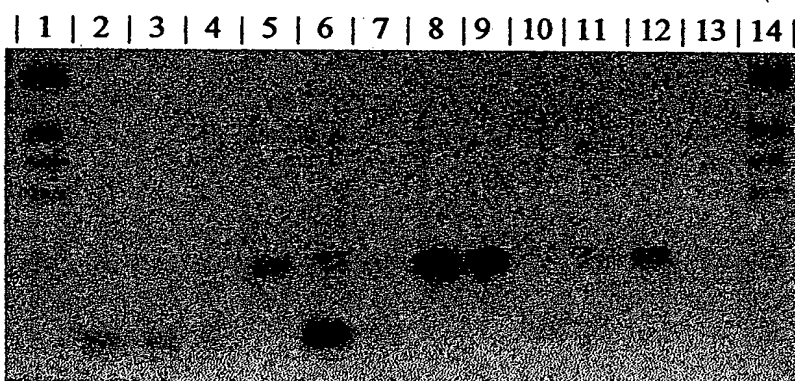


FIG. 8

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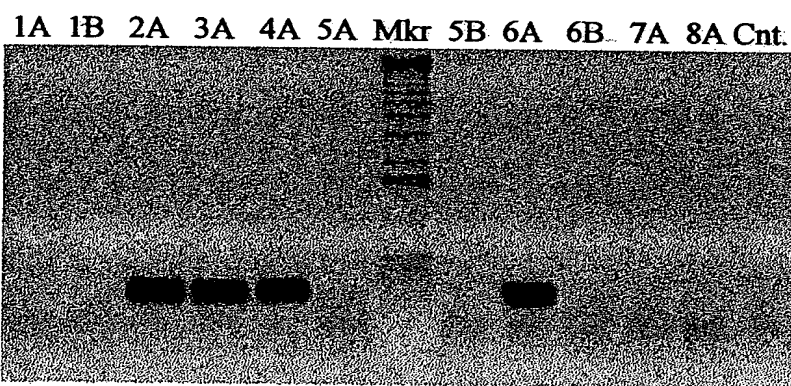


FIG. 9

09775938.013401

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2A 3A Mkr. 4A 6A

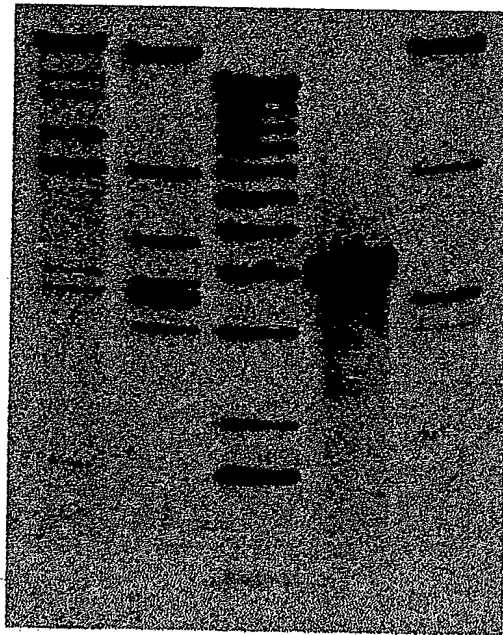


FIG. 10

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5A 5B 3A 6A

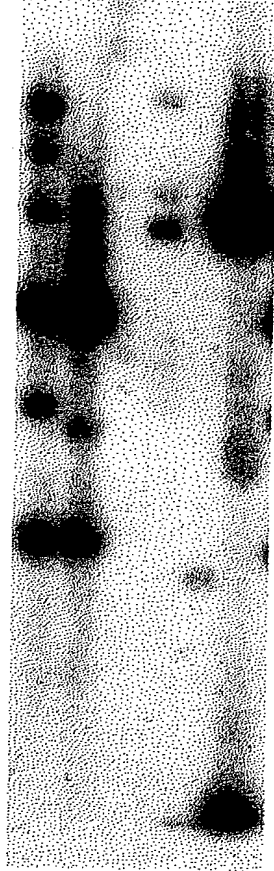


FIG. 11

0975938.013401

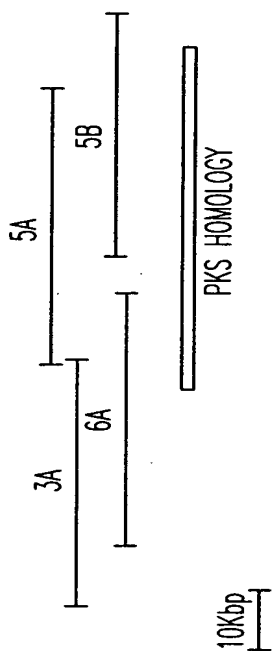


Fig. 12

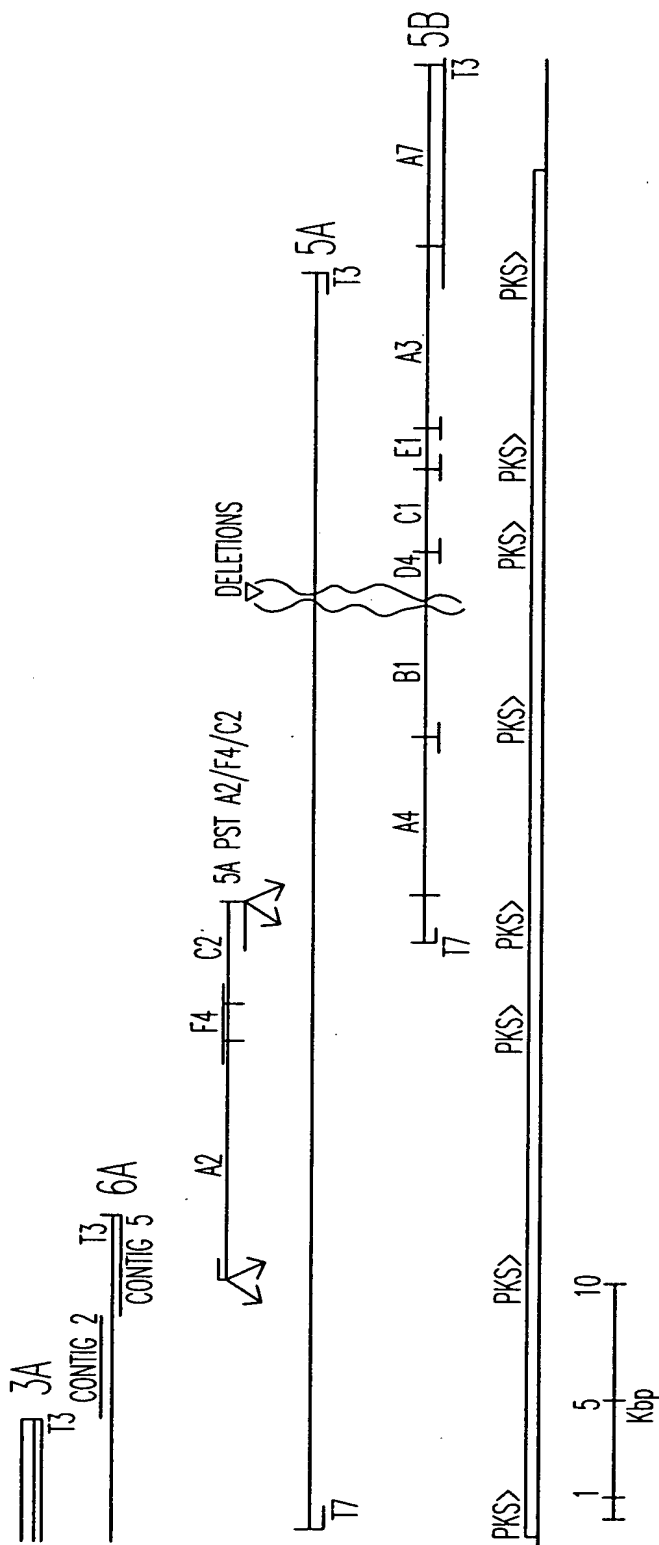


Fig. 13

FIG. 14A

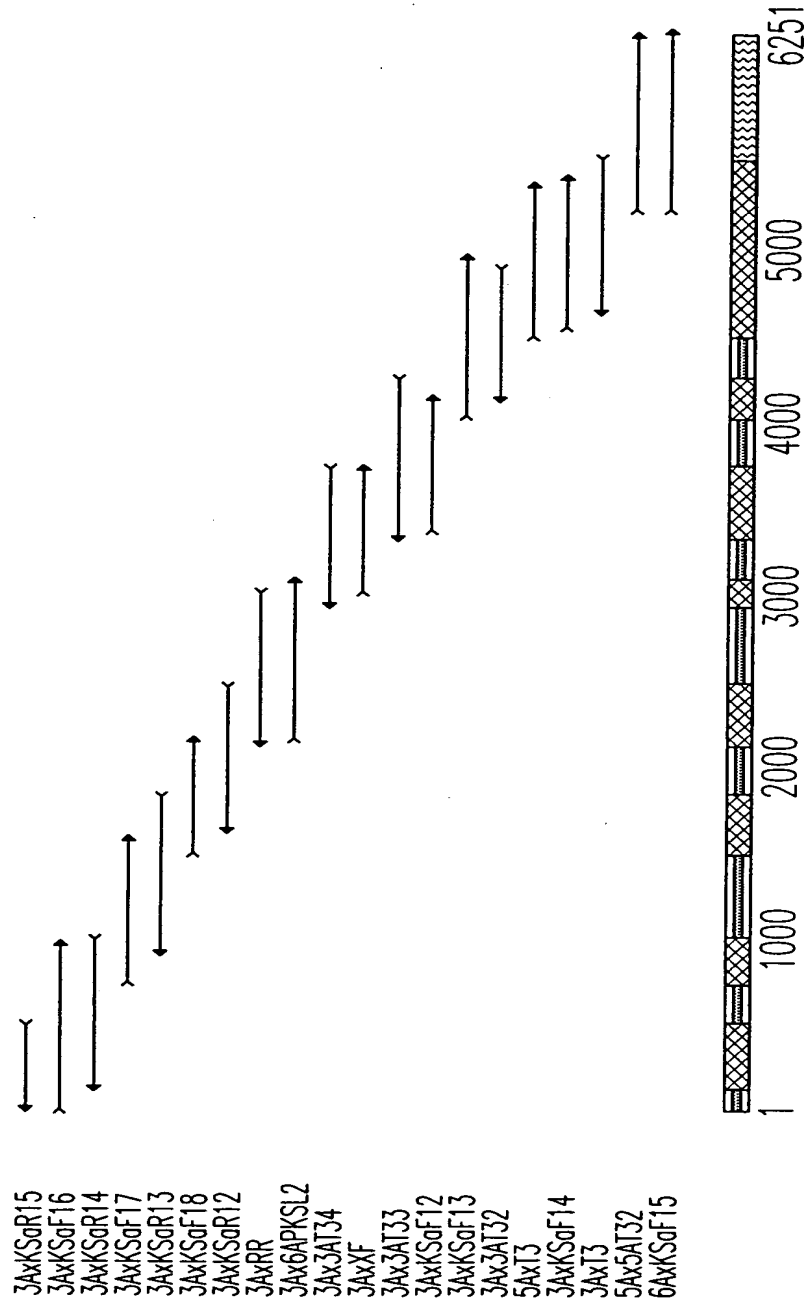


Fig. 14A

Nucleotide and Translated Amino Acid Sequence of PKS Cluster on Clone 3A

1	GAT GGA ACT CAT TAC CAC CCA CAA AAA AGT CCG TTT CTT CAA	42
43	CGC GGT TGA TTT AAT TAA CCA GCT AAT CAA CGA ACA ACA AAA	84
85	GCA GCA AAC GGG CAA ACT CAT CAG AGC CTT ATT GCA GGT GGA	126
127	TTG TTT AAG TAT TGA TGA ACT CGG TTA TAT CCC ATT CCC TAA	168
169	ATC CGG TGG GGC GTT GCT CTT CCA CCT CAT CAG TAA ACG GTA	210
211	TGA GAA GAC CAG TAT TAT CAT CAG CAC CAA TCT GGC TTT TGG	252
253	GGA ATG GAA CAG TGT GTT TGG TGA TGC CAA GAT GAC CAC CGC	294
295	GTT ATT GGA TCG TAT CAC GCA TCA TTG TTC AAT CAT CGA AAC	336
337	CAA GCA TGC GTC GTA TCG TTT TAA GCA GAG TCA GAA ACA GAC	378

379 ATG AAA GTA GCT TTC ACC GGT GGG ACA GTG TTA GAT GCA AAC 420
 <<<TRANSPORASE ORF

421 CCC GGG TCA GCT TTA AGT GCA ATT TGA AAA CCA ATG TGA TAA 462
 Possible transcription control sequences> -35 -10

463 TTG TGG CTA AGA TCA ATA AAA ATA AAA TTT TTT TAT TGA TTA 504
 Inverted repeat> <----->

505 TGA TGA TCC ACG TTA AAA ATA CTA TAA ATA TGA AAT AAT 546

547 ATT TCA ACT TTA TTT TTG ATG GTC GTT GTT GAG GAA TTT TTT 588
 PKS ORF START>>> Possible SD sequence
 M V V V E E F F

589 GTG AGT TAT CGA GAT ATT TTG AAG GCT TTA CAG GAT GAA AAA 630
 V S Y R D I L K A L Q D E K

631 ATT AGT TTT GAA GAG GCT AAA TAT AAG TTA ATA AAA AGA AAA 672
 I S F E E A K Y K L I K R K

673 GAT AAA AAA TCA AAA CAG CGT TTA AAT CAT GAT CGT GAA TTA 714
 D K K S K Q R L N H D R E L

715	AAT CGA TCG ATG AAT ATT ACG CCA AAA ATA GTG AAT AAT TAC	756
	N R S M N I T P K I V N N Y	
757	GGT TTA GTA TTA TTG GGC GGT CAT TTA TTT GAA GAA CTC CGT	798
	G L V L L G G H L F E E L R	
799	CTG AGT GAA TGG AAA GCT GCC AAC CCT AAC AAT GAA GTT	840
	L S E W K A A N P N P N E V	
841	AGC ATT CAG GTC AAG GCA TCC GCC ATT AGT TTT ACC GAT ACC	882
	S I Q V K A S A I S F T D T	
883	TTG TGT GTA CAA GGT TTA TAT CCA TCA CAC TAT CCC TTT GTT	924
	L C V Q G L Y P S H Y P F V	
925	CCG GGC TTT GAA GTA TCG GGA GTG ATT CGT CAA GTG GGT GAA	966
	P G F E V S G V I R Q V G E	
967	CAC ATA ACC GAC TTA CAC GTG GGT GAT GAA GTT ATT GCG TTC	1008
	H I T D L H V G D E V I A F	
1009	ACA GGA TCA TCA ATG GGA GGG CAT GCT GCC TAT GTG ACG GTG	1050
	T G S S M G G H A A Y V T V	
1051	CCA CAA GAT TAC GTG GTA CGA AAA CCC AAG GAC TTA TCT TTT	1092
	P Q D Y V V R K P K D L S F	

1093 GAG GAT GCC TGT AGC TTC CCA TTG GCT TTT GCG ACC GTC TAT 1134
 E D A C S F P L A F A T V Y

1135 CAC AGT TTT GCA CGG GGA AAA TTA TCT CAC AAC GAT CAT ATC 1176
 H S F A R G K L S H N D H I

1177 TTG ATA CAA ACG GCG ACA GGT GGC TGT GGT TTG ATG GCA CTT 1218
 L I Q T A T G G C G L M A L

1219 CAG TTG GCG CGT TTA AAG CAG TGT GTG TGT TAT GGG ACC TCC 1260
 Q L A R L K Q C V C Y G T S

1261 AGC CGA GAA GAC AAG CTT GCA CTC CTC AAA CAG TGG GCA CTG 1302
 S R E D K L A L L K Q W A L

1303 CCC TAC GTC TTC AAT TAT AAG ACG TGC AAT ATT GAT GAG GAG 1344
 P Y V F N Y K T C N I D E E

1345 ATT CAA CGC GTC AGT GGT CAT CGA GGT GTC GAT GTC TTA 1386
 I Q R V S S G H R G V D V L

1387 AAT ATG CTC CCA GGA GAG CAT ATA CAA GGG CTG AAT AGT 1428
 N M L P G G E H I Q Q G L N S

1429 TTA GCC AAG GGA GGC CGT TAT TTG GAA CTG TCG ATG CAT GGA 1470
 L A K G G R Y L E L S M H G

1471	TTG TTA ACG AAC GAA CCT GTC AGT CTG TCG TCT CTG CGT TTT	1512
	L L T N E P V S L S S L R F	
1513	AAT CAA TCC GTT CAA ACC ATC AAT TTA CTG GGG TTA CTC AAT	1554
	N Q S V Q T I N L L G L L N	
1555	AAG GGT GAT GAT GGC TTT ATC GGG TCT GTA TTA GCG CAA ATG	1596
	K G D D G F I F S V L A Q M	
1597	GTT TCC TGG ATT GAA TCA GGT GAT TTA GTG TCA ACC GTG TCG	1638
	V S W I E S G D L V S T V S	
1639	CGT ATT TAT CCG TTG GAT CAG ATC GGT GAA GCG TTA CGT TAT	1680
	R I Y P L D Q I G E A L R Y	
1681	GTC TCT GAA GGG GAG CAT ATA GGT AAA GTC GTT GTG AGT CAT	1722
	V S E G E H I G K V V S H	
1723	ACA GCG ACA GAG CCG ATG GAT TGC AGA CAG CGC TGT ATT GAC	1764
	T A T E P M D C R Q R C I D	
1765	AAT GTA TTG AAG CAA GGG CAA ATG GCG GCC TTG ACC GCG ACA	1806
	N V L K Q G Q M A A L T A T	
1807	GGG GGA AAA AGC CGG GTG TGG GGT GGT ACT GGT GTC AAT GAC	1848
	G G K S R V W G G T G V N D	

1849	AAA CCG TCT CCT GCT GTT GGT ATA GAG GAG CGT TTA TTG GAA	1890
	K P S P A V G I E E R L L E	
1891	GGG ATA GCG GTG ATT GGT CTG TCA GGC CAG TAT CCG AAG TCG	1932
	G I A V I G L S G Q Y P K S	
1933	AAG ACA CTG GAG CAA TTT TGG CAG ACC CTA GCG GAT GGA GTG	1974
	K T L E Q F W Q T L A D G V	
1975	GAT TGC ATC TCA GAG ATT CCT GCT GAT CGC TGG TCG TTA GAA	2016
	D C I S E I P A D R W S L E	
2017	GAG TAT TAC TCG CCA ATA CCG GAA GGG GGT AAA ACG TAT TGT	2058
	E Y Y S P I P E G G K T Y C	
2059	AAG TGG ATG GGT GTT TTG GAG GAC ATG GAT TGT TTT GAT CCG	2100
	K W M G V L E D M D C F D P	
2101	TTG TTT TTT GCG ATA TCT CCT CGG GAA GCG GAA GTG ATG GAC	2142
	L F F A I S P R E A E V M D	
2143	CCA CAG CAA CCG TTA TTT TTA GAG AAT GCA TGG AGT TGT ATA	2184
	P Q Q R L L F L E N A A W S C I	
2185	GAG GAT GCG GGG ATT AAC CCT AAG ATG TTA TCC CGT AGT CGA	2226
	E D A G I I N P K M L S R S R	

FIG 14B (cont'd)

2227 TGT GGG GTA TTT GTT GGG TGC GGT GCG AAT GAT TAC AGC GCT 2268
C G V F V G C G A N D Y S A

2269 CTA ATG AAC AGT AGC CAC TCA ACG AGT CTC GAA TTA ATG AAG 2310
L M N S S H S T S L E L M K

2311 GAA TTA GGC AAC AAC TCT TCC ATT TTA TCT GCA CGA ATC TCC 2352
E L G N N S S I L S A R I S

2353 TAC TTT TTA AAT TTA AAG GGC CCT TGT CTT GCG ATT GAT ACC 2394
Y F L N L K G P C L A I D T

2395 GCA TGT TCT TCT TCA TTA GTG GCC ATT GCC GAG TCG TGT AAT 2436
A C S S S L V A I A E S C N

2437 AGT CTG GTG TTG GGT ACT AGT GAC TTG GCG TTG GCA GGT GGA 2478
S L V L G T S D L A L A G G

2479 GTG TTG CTG ATG CCA GGT CCA TCC TTA CAT ATA GGT TTG AGT 2520
V L L M P G P S L H I G L S

2521 CAT GGA GAA ATG TTA TCA GTA GAT GGT CGC TGC TTT ACC TTT 2562
H G E M L S V D G R C F T F

2563 GAC CAA CGG GCC AAC GGT TTT GTA CCT GGA GAG GGT GTC GGC 2604
D Q R A A N G F V P G E G V G

2605 GTT GTC TTG TTA AAA CGC ATG TCG GAT GCG GTG CGT GAT GGT 2646
V V L L K R M S D A V R D G

2647 GAT CCC ATT CGT GCA GTG ATA CGG GGC TGG GGT GTG AAT CAG 2688
D P I R A V I R G W G V N Q

2689 GAT GGT AGA AGT AAT GGT ATT ACG GCG CCG AGT TCA AAA GCG 2730
D G R S N G I T A P S S K A

2731 CAA AGT GCT CTG GAG CAA GAG GTT TAT CAA CGT TTT AAT ATT 2772
Q S A L E Q E V Y Q R F N I

2773 GAT CCA TCG AGC ATT ACC TTA GTC GAA GCA CAC GGA ACG GGC 2814
D P S S I T L V E A H G T G

2815 ACC AAA TTG GGT GAT CCG ATA GAA GTC GAG GCA TTG GCA GAA 2856
T K L G D P I E V E A L A E

2857 TCG TTT CGA GTC TAT ACG GAC AAG CGT CAT TAC TGT GCT CTG 2898
S F R V Y T D K R H Y C A L

2899 GGG TCG GTA AAA AGT AAT ATT GGT CAT TTG GGG GTA GGT GCT 2940
G S V K S N I G H L G V G A

2941 GGG ATA GCG GGC GTG ACC AAA GTA TTG TTA TCT TTG CAG CAT 2982
G I A G V T K V L L S L Q H

2983 CGC ATG TTA CCA CCG ACG ATT CAT TGT GAG GAT GTA AAC CCA 3024
R M L P P T I H C E D V N P

3025 CAG ATT GCG TTG GAA GGT AGC CCC TTT TAT ATC AAT ACG GAA 3066
Q I A L E G S P F Y I N T E

3067 TTA AAG CCT TGG CAG TCT GGT GAC AGT ATA CCA CGA CGG GCT 3108
L K P W Q S G D S I P R R A

3109 GGT GTC AGT TCT TTT GGA TTT AGT GGT ACC AAT GCA CAT CTT 3150
G V S S F G F S G T N A H L

3151 GTA TTG GAG GAA TAT CTT CCT CAC TCG ACA GGA ACA ATA GAG 3192
V L E E Y L P H S T G T I E

3193 TCG TTT GCT GCG AAT CAT GCA AGT ACA GTT ATT ATT CCT TTG 3234
S F A A N H A S T V I I P L

3235 TCA GCG AAA AGT CAT AAT AGT TTA TAC ACA TAT GCT CAA ACG 3276
S A K S H N S L Y T Y A Q T

3277 CTA TTG ATA TTT TTA AAA CGT AGT CAG GTT ACT GAC GCT AAA 3318
L L I F L L K R S Q V T D A K

3319 AAA ATC ACA ATA GAT CAC ATG GAA TGT CGC TTG TAT TTA 3360
K I T I D H M E C R L L D L

3361 GCC TAT ACT TTG CAA GTG GGT CGC GAG GCA ATG GAC AAA CGG 3402
A Y T L Q V G R E A M D K R

3403 ATA AGT TTT ATT GTC AAC ACA AAG CAA GCA CTC GTG GAA AAG 3444
I S F I V N T K Q A L V E K

3445 CTA AAT GCT TTT CTA GAG AAG GAA AAG ACT ATA ACA GAC TGT 3486
L N A F L E K E K T I T D C

3487 TAC CAC TAT TTA TTT GAT AGT GAC AAA CCG TCT ACA GAA ATT 3528
Y H Y L F D S D K P S T E I

3529 TTC CGT TTA GAC GAA GAT GAC AAA GTA TTA ATA AAC AGC TGG 3570
F R L D E D D K V L I N S W

3571 ATA AGT CAA AGT CAA TAT CAC AAA TTA GCC GAA GCC TGG AGC 3612
I S Q S Q Y H K L A E A W S

3613 CAA GGA CTC GAT ATC GAC TGG ACG CTA CTC TAT ACC CAC TCA 3654
Q G L D I D W T L L Y T H S

3655 TCA ACC CCT CGT CGC ATT AGC CTG CCC ACG TAT CCC TTT GCC 3696
S T P R R I S L P T Y P F A

3697 AGA GAC CGC TAC TGG CTA CCA GAA AAA CCA CGC TAT AAC GCG 3738
R D R Y W L P E K P R Y N A

3739 GCT AAT CAT CCG GTA TCC AAC CAT CAA ACA ACC ACT CAG AAT 3780
 A N H P V S N H Q T T Q N

3781 CAC TCA CGC TTT GCC ATT GAT ACG GAT CAC GAT GTC GTT GCC 3822
 H S R F A I D T D H D V A

3823 GAG ATC ATG CAA AAG ACA CAT CAA CAG GAA CTG GAA CAA TGG 3864
 E I M Q K T H Q Q E L E Q W

3865 TTA TTA AAA CTG TTG TTT GTG CAA TTG CAA CAT ATG GGA TTA 3906
 L L K L L F V Q L Q H M G L

3907 TTT CAA CAT CGT GTC TTT GAG ACA GCG ACC GCT CTA CGT CAA 3948
 F Q H R V F E T A T A L R Q

3949 AGT GCA GGC ATC GTT GAT AAA TAT GAT CGC TGG TGG CAT GAG 3990
 S A G I V D K Y D R W H E

3991 TGT TTA AGC GTT TTA CAG GAT GCG GGT TAT CTT GAA TGG AAA 4032
 C L S V L Q D A G Y L E W K

4033 GAC GAT AGC GTA GCC GCC GCA CAG GCA TTG GAG TCT GAA TCG 4074
 D D S V A A A Q A L E S E S

4075 CAA GAG GCA TGG TGG AGC CGA TGG AAC ACG GAG TAT AAG CAT 4116
 Q E A W W S R W N T E Y K H

4117 TAC CAG AAT GAT CCG GAA AAA AAG ACG TTA GCG ATA TTG ATT 4158
Y Q N D P E K K T L A I L I

4159 AAC GAT TGC TTA CAG GCA TTA CCA GGG GTG TTA AGT GGT GAG 4200
N D C L Q A L P G V L S G E

4201 CAA TTA ATA ACG GAT ATT ATT TTC CCC AAT GGT TCG ATG GAG 4242
Q L I T D I I F P N G S M E

4243 AAA ATG GAA GGC TTA TAT AAA AAT AAT AGG ATT GCA GAT TAT 4284
K M E G L Y K N N R I A D Y

4285 TGT AAT CAG TGT GTT GGA GAC CTG CTC GTC CAG TTT ATT GAA 4326
C N Q C V G D L L V Q F I E

4327 GCA CGT CTG TCA AGA GAT GCC AAT GCG AGG ATA CGG ATT ATC 4368
A R L S R D A N A R I R I I

4369 GAA ATT GGG GCC GGT ACG GGG GGC ACC ACC GCG ATA GTG CTG 4410
E I G A G T G G T T A I V L

4411 CCA ATG TTA CAA GCC TAT CAG GAT CAT ATC GAT ACG TAT TGT 4452
P M L Q A Y Q D H I D T Y C

4453 TAT ACG GAT GTT TCC AAA GCC TTT TTG ATG CAT GGA CAG GAA 4494
Y T D V S K A F L M H G Q E

4495 CAC TAC GGC GAA CAA TAC CCC TAT CTG AGT TAT TGC CTC TGT 4536
H Y G E Q Y P Y L S Y C L C

4537 AAT ATT GAA CAG GAC TTA GTG GCT CAA GGA ATC AGC GTT GGT 4578
N I E Q D L V A Q G I S V G

4579 GAT TAT GAT ATT GCG ATC GCA GCC AAT GTA TTA CAT GCC ACG 4620
D Y D I A I A A N V L H A T

4621 CGG AAT ATA CAC GAA ACG GTC AGC CAT GTG AGG CAG GCA TTG 4662
R N I H E T V S H V R Q A L

4663 GCG GCC AAC GGT TTA TTG ATT TTA AAT GAG TTT AGC CAA AAA 4704
A A N G L L I L N E F S Q K

4705 AGC GTT TTT TCG AGT GTG ATA TTT GGT TTG ATC GAT GGT TGG 4746
S V F S S S V I F G L I D G W

4747 GCC TTA TCT GAA GAT ACG GGA TTG CGT ATT CCT GGA AGC CCA 4788
A L S E D T G L R I P G S P

4789 GGG TTA TAT CCT AAG CAG TGG CAA GCG GTA CTG GAG GCG TCG 4830
G L Y P K Q W Q A V L E A S

4831 GGT TTT GGT GAC GTG GAA TTT CCG CTC CAT GAC GCT CGT GAG 4872
G F G D V E F P L H D A R E

4873 TTG GGT CAA CAA ATC ATC CTG GCA ACC AAC GCC CAT GCG AAC 4914
L G Q Q I I L A T N A H A N

4915 GTT GCT AGC GAT CTT GCG ACA TCG GTG ATT GAT CAT GCC CCC 4956
V A S D L A T S V I D H A P

4957 AAG AGA TTG CCA TCC GCC GAG GTC AGC ATG GAT GAG AGA GTG 4998
K R L P S A E V S M D E R V

4999 AGC CAT GAT GCC ATG ATG AAG GCA TCG GTC AAA CAG TTG TTG 5040
S H D A M K A S V K Q L L

5041 GTA GAG CAA TTA TCC CAG TCT TTA AAA CTG GAT ATG AAT GAG 5082
V E Q L S Q S L K L D M N E

5083 ATT CAC CCT GAC GAA TCC TTT GCC GAT TAT GGT GTT GAT TCC 5124
I H P D E S F A D Y G V L S

5125 ATT ACC GGT GCT AGT TTT ATT CAA CAG CTT AAT GAC ACG CTG 5166
I T G A S F I Q Q L N D T L

5167 ACA CTG ACT TTA AAG ACG GTG TGT TCG TTT GAT CAC AGC TCG 5208
T L T L K T V C L F D H S S

5209 GTA AAC CGA CTG ACG GCC TAT CTG TTA TCT GAC TAT GGT GAT 5250
V N R L T A Y L L S D Y G D

5251	GAT ATC GCG CAG TGG TTA GCA ACG GCA CCA GCG TTG GTT GAT	5292	D I A Q W L A T A P A L V D
5293	CAT CCA CAG AGT GTC AGT CAG GTG TTG CCT GAA AGG TCG	5334	H P Q S V V S Q V L P E R S
5335	CCA GCA AGC ACA CAA GCC AAG CCC TTG CCT TCA GTC CCC CCT	5376	P A S T Q A K P L P S V P P
5377	TCG TTA TCG ATG GAG TCA CCC GTT CAA CAG GAG TCG ATA GCG	5418	S L S M E S P V Q Q E S I A
5419	ATT ATT GGT ATG AGC GGA CGG TTT GCG GCG TCA GAA AAC CTG	5460	I I G M S G R F A A S E N L
5461	GAA GCG TTT TGG CAA CAG TTG GCA CAG GGT GTG GAT TTG GTC	5502	E A F W Q Q L A Q Q G V D L V
5503	GAA CCC GCG TCA CGT TGG GGG CCA CAA GCG GAG ACT TAC TAC	5544	E P A S R W G P Q A E T Y Y
5545	GGC AGT TTT CTC AAG GAT ATG GAT CAA TTT GAT CCT CTC TTT	5586	G S F L K D M D Q Q F D P L F
5587	TTT AAT CTC TCC GGT GTG GAA GCG AGT TAT ATG GAC CCG CAA	5628	F N L S G G V E A S Y M D P Q

5629 CAA CGT TGT TTT CTG GAG GAA TCC TGG AAT GCA CTG GAG AAT 5670
Q R C F L E S W N A L E N

5671 GCG GGT TAT GTG GGT GAT GGC ATA GAA GGC AAG CGT TGT GGT 5712
A G Y V G D G I E G K R C G

5713 ATT TAT GCC GGT TGC GTG TCC GGT GAC TAC GCA CAA CTG TTG 5754
I Y A G C V S G D Y A Q L L

5755 GGC GAC CAA CCC CCG CCC CAG GCT TTT TGG GGC AAT GCC AGT 5796
G D Q P P P Q A F W G N A S

5797 TCT ATT ATT CCC GCC CGG ATT GCC TAT TAT TTA AAT CTT CAG 5838
S I I P A R I A Y Y L N L Q

5839 GGC CCT GCT ACC GCG GTG GAT ACT GCC TGC TCA AGT TCT CTG 5880
G P A T A V D T A C S S L

5881 GTG GCG GTG CAT TTG GCC TGC CAG GCC CTA CAC CTG GAT GAA 5922
V A V H L A C Q A L H L D E

5923 ATG GAG ATG GCC TTG GCA GGA GGT GTG TCT CTT TAT CCA ACC 5964
M E M A L A G G V S L Y P T

5965 CCC ATC ATT GTA TGA GTC TTT GCG TGG TGC AGA TAT 6000
P I I V Z V F A W C R Y

Genetic map of chromosome 1 showing the locations of 11 genes. The map is a horizontal bar with a scale from 1 to 4700. Genes are represented by horizontal lines of varying lengths and patterns (solid, cross-hatched, wavy, or dotted) indicating their relative positions on the chromosome.

Gene	Approximate Position (kb)
3AxT3	100
6AxSaf15.chr	100
5Ax5AT32	100
6Ax3AT136A.chr	100
6Ax3AT136A2	100
5Ax3AT136A3R	100
6Ax3AT136A3.chr	100
6Ax3AT136A5.chr	100
6Ax3AT136A7.chr	100
6Ax6APB7R1.chr	100

Fig. 15A

*Contig Sequences from Cosmid 6A**Contig 2*

ANCAATTTATNACATCCNCGGGAAAANACGAACGGTCACCATNTAGGCAG
 GCATTGCGGCCAACGGTTATTTTTTTTAAATGAGTTAACCAAAAAAGNGTT
 TTTGNAGTGTAATTGGTTTGNCGANGGTTGGCCTTATTTAANANAGGGA
 TTGNGTATTCTTGAAACCCAGGGTTATTTCTAACAGTGCAANCGGTACT
 GAGGCGTCGGNTTTGGTTACGTGAATTTCCGCTCCATGACGCTCGTGAGT
 TGGGTCAACAAATCATCTGGCAACCAACGCCCCATGCGAACGTTGTAGCG
 ATCTTGCGACATCGGTGATTGATCATGCCCCCAAGAGATTGCCATCCGCC
 GAGGTCAGCATGGATAAAGAGTAGCCATGATGCCATGATGAAGGCATCGG
 TCAAACAGTTGTTGGTAGAGCAATTATCCCAGTCTTTAAAACTGGATATG
 AATGAGATTCACCCTGACGAATCCTTTGCCGATTATGGTGTGATTCCAT
 TACCGGTGCTAGTTTTATTCAACAGCTTAATGACACGCTGACACTGAYTT
 KRAAGACKKTGTGTTTGCTTGATCACAGCTCGGTAAACCGACTGACGGCC
 TATCTGTTATCTGACTATGGTGATGATATCGCGCAGTGGTTAGCAACGGC
 ACCAGCGTTGGTTGATCATCCACAGAGTGTGTCAGTCAGGTGTTGCCTG
 AAAGGTCGCCAGCAAGCACACAAGCCAAGCCCTTGCCCTTCAGTCCCCCT
 TCGTTATCGATGGAGTCACCCGTTCAACAGGAGTCGATAGCGATTATTGG
 TATGAGCGGACGGTTTGCGGCGTCAGAAAACCTGGAAGCGTTTTGGCAAC
 AGTTGGCACAGGGTGTGGATTTGGTCTGAACCCGCGTCACGTTGGGGGCCA
 CAAGCGGAGACTTACTACGGCAGKTTYCTCAAGGATATGGATCAATTTGA
 TCCTCTCTTTTTTAATCTCTCCGGTGTGGAAGCGAGTTATATGGACCCGC
 AACAACGTTGTTTTCTGGAGGAATCCTGGAATGCACTGGAGAATGCGGGT
 TATGTGGGTGATGGCATAGAAGGCAAGCGTTGTGGTATTTATGCCGGTTG
 CGTGTCCGGTGACTACGCACAACTGTTGGGCGACCAACCCCCGCCCCAGG
 CTTTTTGGGGCAATGCCAGTTCTATTATTCCCGCCCGGATTGCCTATTAT
 TTAAATCTTCAGGGCCCTGCTACCGCGGTGGATACTGCCTGCTCAAGTTC
 TCTGGTGGCGGTGCATTTGGCCTGCCAGGCCCTACACCTGGATGAAATGG
 AGATGGCCTTGGCAGGAGGTGTGTCTCTTTATCCAACCCC : ATCATTGTA
 TGAGTCTTTGCGTGGTGCAGATATGCTCTCTTCGAGGGGGCGTTGCCACA
 : GCTTTGATGCCTGTGCCSACGGTATCGTCATTKGTGAATGGGTGGGGGK
 GGTG : GG : GCTAAAACGCTTGTCGGCGGCATTTGGCCGGATGGC : AATCA
 TATTCACGGAGTGATTGCTGGCAGTGGTATCAA : TCAAACGGTCGTAGT
 AAMTGGGAATACGGGCACCCAGTGCMCAAATSCAAAGAACGCTTGGWAAC
 GTTGGGT : TATGATCGCTTTGDTGYAAACCTTKAGCAHATKAGCATGKT
 CGAAGGCCVDTGGACAGGGCACGRGDYTTAGGTGKACCCARTTGAAVRT
 DAAACYTTAMACCCGGVGGTTTAGACACTWADACGSAATAAAGAAHAATD
 HTGVGCHATCGSGTCGGC : CAAAACCAATATGGGAMACYGGSACCATGGT
 WGGCTGGGTDGTTGGGGGGCTTGTKKGATTRTKKAAAG : TGGTGTGTCGAT
 GCAACACCGGCAAAATACCTCCATCGCTACATTTTACTCAGGGCAATCCG

FIG. 15B

097595260
 "01"

AATATTGACTTTGATCGCAGTCCTTTTTTATGTGAACACCGAGCTTCGTGA
 TTGGTCGGTGGGTGAAGGAGAGACCCGTTGTGCGACGGTGAGCGCCTTTG
 GATTTAGTGGTACCAATGCCCATGCAGTGATAGAAGAAGCGCCGCCAGTC
 GTGCGCCAACATGAAGAGCAGCCGGGTTATTTAAGTGGTCTTATCGGCGC
 ATAGTGATGATCAATTACGGCAGCAAGGTTGAGAACTTTATGCGGGTTAT
 TGTGAGCATCACCTGAGTTGGATGTGGGCAARTCYTGAGRTTATACCTT
 ATTG : TTGGG : TCGTCAACATTGG : TCGCATCGTCTGGCTGGTG : TGGCG
 T : GTGATCTTGAGGATTTGCGGCGGTCACCTGGATCAGTGG : TTGGGTCAG
 GGTAAGGCTCCCCGAGTGTATGT : GTCT : GCA : TTGGCTGAGGGTGAACC
 AC : GTCTA : CAAGTTTCTCTACAGCACGTTGGTAATGAATGTATAAGAGC
 A : TGCAGTGAGTCCTGTTCTGCGAATCACTATGTGGACGCGTTATCGACG
 GTGGGGGAWTTATATGTTTCAGGGTTATCCATTGGAGTATGGTGTGTTGTT
 TGSCCAKGGCWATRRWCKTWTSSKTTKCCGAMCTAKSSGTTTSCWARKC
 AGCGTTGTTGGGTACCACAAACAATAAGCCACTCCACAGTGGATGCTATA
 TCACAGCATGCTTTTTTACATCCTTTGTTACATCGAAATACTTCGGACTT
 TTCATGTCAGCGTTTTAGCTCCACATTTAATGGGAGTGAATTTTTTCTTA
 CTGACCACCTTATTCTAGGCCAAAAGATATTGCCCGGAGCCGMTYMTTTC
 GAAATGGTCCGAGAGGCCATCAAACAAGCTTGTGGATTTTTGGATAATTC
 TGAAGTTGTTATTCAGCTCAATGATATTGTATGGACAAAAGTGATTGCAG
 TTGATGATGATATCAAAGAAGTACATATTGATCTTTTTTTGTAGAAAATGG
 CAGTGAATCATGCTTAACGCATGAGTTTGATAGGCCAAAACATATCGCTTA
 ACTATGAAGTTTATACGCAAAATAGTGAGGGGAAATGGCAGGCAGAATAAA
 AAAATTATTCATAATCACSGCATGGTCACCTTGAGTTTCTTTGAATACAA
 CCGGAGGTTGTAGATCTTGATGAACTACSCMGCCMCTATAAATCAASCAA
 GTCTTANATGCTGAACAAATGTTATTTGGCGTTTGGGAATCAATARGTGTT
 CAKWWTGGTGACAGGCMCCGATGTATARATACSGTWTATWTCGGTGAGCA
 TCAAGTATTARCMAACTYTYTWTGCCAGAAATTGCAGGAGAWTTGGATA
 ARTSCTTTGTTTTGCACCCAGGCATGGTAGATTCTGCTTTACAGGCCACA
 TTGGGTATTACTTCTGATATCAATGATATCATGTTAGCCGATCGCCAAGC
 CGATTATATCTTGACCCCCAAGTCGACGCTTCCCTTTGCTCTKGWMAAAS
 TKKAAWTWAYYSGAAAAYGTWCAGATTCTATGTGGGTTTGGATTCKAAAT
 TCTTTATCGACAGACCASAAGTCTCCACGCTCAGCCCGTTAATGATATAC
 AACATCTCGACATTGATCTATTGGACGCTCAAGGAAAAGTATGTGTGCGA
 ATGCGAGGTTTCTTGTCTCGGGTTTTGCCCAAACAATGGTTAATTCACTA
 SCAGAAGAACCGTTTACAGCTTTGAATAACCAGCAAGCACC : TTACTTTT
 TCCAATCCCAGGTATGGCGTT : CGCCAGACTCTTATCCAAGTGGCCAATT
 AACCCTACCTTAAWTGATGCCCGGTCCATCCTTGGGGTGGTTGTACGNAT
 TTGAAATATGGACTTAATGTAGAAAATAGAAGGATGTAGAGGTTTATTGA
 CCTTACACTCCCAAACCACTTGGATTTACAGGATCGCTACTTGTGATATT
 TGCAGTGCAGGTATTTGAAATTGTAAAANGACGTAATGATAGATAAATCC
 GTACAACCAGTACTGATTTCAGTTGTTAGTTCCTAATGATGGAGAACAAGG
 GGTATTCACCAGTTTATTGGCATTACTAAAGGTGGCTCGCTCAGAAAACC

FIG 15B (cont'd)

0975938.013101

CCAAAGTGATTACACAATTAATTCAAGTACAATAGTCCCGCAAACCTCGC
 AAAATTTACTACGGATTATCACTGAAAATAGTCATGATATAACACATGCA
 GAAATTCGTTATCACTTGGNATCAACGTGAATGTTTGKTTTGGKAASCAG
 TACCCAAATCTACAAAAACYTTACTCAACTCCCTGGAAATCTAACAGWGT
 TTATYTCWTTMCGGGAGGKACCGGTGGAATTAGCGTCACAGTTTGTCAA
 GCGWTAGCAGTGAGTCCCACAAAATCGGTATTAATCTTKGTAGGKCSKTC
 ACCACTCMATGRTGAAAAGAAATCTTAWTTAACTAGAACTGGRATCCGTT
 GGGGGACCATTATTAAWTMCTATCARAACRGATGTAAGCCAACANGGATC
 AAGTTAAAGCWTTGWTTAAARAAATTKTTCASCAWTMCGGTCAATTGA
 AWGGKGTTSYATTGTGCAGGTATTGTCAACGACAATTTTATTCTCAAAAA
 GTCCTCGACAGAATACAAAGAGGTATTGTTGTNTAAAGTATCNGGTNCTG
 TCAATTTAGACCAGGCANCACANAGNATAGAGATGGATTTTCTTATNNTA
 NTAAAAACGTTATCTGCAGTATTCGGANNNACAGNACAGGGTNTTAGATA
 ATNGTCCAAATACTTTTTCCAGGTGTTGGGTAAANGGGATTGGAANCCAA

Contig 5

GCNCTTNCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTG
 CAGTATTCGGAAATGCAGGTCAATCAGATTATTCAACGGCAAATAAATTT
 ATGGATGAGTTTGCACGCTATCGTAATGCTCTGGTCAATCGCAAAGAGCG
 CTATGGTTTAACTACTATCGATTAAATTGGCCGTACTGGAGAGAAGGAGGTA
 TGAGTATTGAGGAAAATTTTGAAAATATAATGCAAGAGAATACCGGTATG
 TCCGCCCTGGAGACATCACAAGGTATTGAAGTATTACAAAGAGCTTGGCA
 GTTGCAGTACACGCAATTGTTGGTAATGGTTCGGAGAGATGAAGCGAATGG
 AGAGCTTTTTGCACAAGCAGGGTTTCGAGCAGATTCCCTGTGGTATCCGCC
 GATACTGTCAGCGAGAATAAAACCTCGACTATTGAGAATCTTTCAGCCGA
 TGTAGATACATTACCATTTCATTGAGGTTTCAGGCATACAATATGGAACAAA
 AAACCCCTTGATTACTTAAAAAATGTATTTGCCACCACAACACAAATCCCC
 GAGAAAAATATTTATGTTTCATGAAACATTGGATAAATACGGAGTTGATTC
 ATTGTTGGTGATGAAAATGACCAATCAATTGGAAAAAGTATTTGGAAAAAT
 TATCTAAAACCTATTTTTTTGAATATCAAACCATTTCGCGAACTGGGCGAT
 TATTTCTTGAAATTTTCATGATGAAAAGTTAAGGGAGTTTTTTTCAGATAGA
 TAGCAAACCTATCTATGTTAAATAATCACGGAGAGATTGAAGTTCAAAAAA
 AAGGGGATGAACCATCGGTTGGAGACAGATATAAGTCAGCTGGATGCCGT
 GCCTATCTCGGTTTATATCGCCTGTGTCAGCAGTGAATCATCAACCAAAA
 AAATGTTAACAATGGTTCCMATANTCATCAGCCAGTAATGGGATATTGGC
 GAWTATTGGGTCTGAGKGGGTCTGTTATTCMCAAGCCTGAGAAATATNGG
 AGGGAATACTGGGGAAGAAATTTGTGTCAANGGCAAGGGACTGGTATTAN
 CNGGAAANTTCAAANGGAGCCGTTGGGGATTGGSAAAGACTATTWYACMS
 MTNNNGATCCSTATTCAGCCMGGTGGGACATCGCAGTAAATNGGGGKGGT
 TTTATTCGGGATGTTGATAAGTTTCGATCCGTTATTTTTTAATATTTCCCC
 TAGKGRGGKGGAGCTYRCTSATCCTCAGGAAYKWTATTTTYCTAGRGTC

FIG 15B (cont'd)

097593.0346

GCGTKGGCTGCATTGGAAGACCCTGGAWATTGCCGGGNATTATTTGCAAA
 TGTTGTCAATCAAGGACTAAATCTTCATTCTCGTCGGRAGATGTTGGTGT
 TATGTGGRAGTRATGTCTTCAGAATATCAGTTGTTTGCTTTTGAACAGAA
 WTTACGTGGTCACCCCATATCCTCNGGTTGGGAGTTATGCCAGTATTGCT
 AMCCSGGTGTCTTATGTTTTARATCTACACNNGGCCCAASCATGACAGTGG
 ATMCGATGTGKTCTARTTCGTTAACGACGCTWCACCTAGCATGKCAGGGA
 TTTAAACTGGGKCGAACTGACCYGGGTATTGKCGGKGGAGTTAAWATT
 ACCATTCACCCCMATAAATATYAGGCSCTGAGTCACGCYCAAATTATTTY
 TACTAGTGGTSGTTGCCAAARTTTTGGTGAACAGGGACAGGGTTATATCC
 CTGGTGAAGGAGTGGGTGCCATAATACTGAAGCGCTTGGTCGATGCCGAG
 CGTGACGGTGATCATATTTATGGTGTGTGTTAAAGGCAGTGCCGTTAACCA
 TGGTGGTAAACCAACGGCTATAACGTTCTTAATCCGAATGCACAACAGC
 AAGTGGTGAGTCGTGCACTACGAGAAGCCGCAGTAAACCCCATCATGTG
 ACTTATATTGAGGCACATGGAACAGGAACCCAATTGGGTGACCCGATAGA
 AATTACTGKTCTRAMMAAAGCGTTCAATAGTTTGACCAATGAGCTTGGTT
 TAAGCGCTGTGSCCAAACMATYKGTTTGATCGGSTCARKGAAGTCAAAA
 TATAGGGCATTGTGAGYCASCAAGCCGGTGTGTCAGCTATTAGCAAAGTA
 TTGTTACAAATGCAACACGGGTCAAATAGTCCCTTCTTTACATTCAAAAG
 CATTGAATCCCAATATTGATTTTACTGTGACTCCCTTTGTAGTAAACCAA
 GGGTTATTGGACTGGAAACGACTTGAAGTTGAAGGAAAGAGGGTRCCGAG
 AATKGCTKKYMWWWCKKYTTTTGGGGCCGGTGGCTCAAATGCCCATGTAG
 TGATTGAGGAGTACGTTGCCAGCAATGAAAAGCAAGAGGATTTTCAAGGA
 AAAGTAATTATCCCTTTATCGGCWATAGACTTSKGATCARCTACAARAAA
 WARKGGATCGTTTGCTTAAGTTTATCRAAAAAAATGAAGCAAARAGGTAG
 GGAAWTKSGCTTAATTGWYTTGCCGWAWACATTGCAACTTGGGCGCGAG
 GTCAATGARAGGAACGTCTGGNCMTTNGANTTGTAGGAATCNAATACCAA
 ATGCTTAANGGAAAGATTTTAGCAAAGGNTTTAAATACTCAGAAAATNGA
 TGCACANATTTTTTCGGATACTTATCAAAAGRCATTTTATCGGGGTTCGTA
 CTAGACCTGGGTGCGTTGRATTTTCGCTATTTTTTTCTGAAGATGAAGAATA
 TGGCCAACACGCTTGATATTTTGGATTCAAAAAGGTAAATACTTTAAG : C
 TGGCGGAGCTTTGGGTAAAAGGTGTGACTATTGATTGGAATAAATGGTAT
 AACGCATTATTAACCCAGAATAAATATTTGAAACC : TCGTCGTATTAGTT
 TGCC : AAC : GTATCCTTTTTCCAGGGATCGTTATTGGATT : CC : AAGTGC
 TTTTCCACAA : CAAACATTTTCTACAGTAATTGAGGCAGACGCCAACCM
 AACATTGAATGAGCTACTGTGTTTTGAAGAAAAATGGCAGGTGCAATCGG
 AACTACATGACTCTGTTGCAGATCAATCTAATGTTATCAATACATTAATT
 TGTTTTTTAACTGAGAAAGAGCATCAAAAAGCATTACAACAATCAATATC
 ATTCCATAGCCCGAAAACACGATTGATTTTATCAGCCAGGCTCAGGCTT
 ATGAGCAGTATTCATCAGATCACTATGCGGTTAATCCAGAAATAGGAAAG
 ACGTACCAACAGGCTTTTCAACACATTGTGAAAAGTATTCATAAAAGTGA
 TGTCACGGACATAATGTATTTATGGGCTCTAGAGGATGAACGCTGGATTA
 CGTCTCCTCTACCTATTGTATATCTTTTAAAAAGTATTGAGGTTTCTTTA

FIG 15B (cont'd)

0975938.013104

TTAAAACCARAAAAATTACTATTTGTTGGAGAATTTAAGACAAGCTTAKC
 RRCGAYTGTYACYKRAAKCCWRGKKGGGWTTYGMAMRWYCKKWAKSGTT
 DGTGCAACSGRATWTKRAGGTTGCGGTGTTATTARAGGCMRTGGAAGGTA
 CTYAATCCCATMCAGTGACAAAGCAAATGGATCTTTGGATAGAAAAATTG
 TGGTCGTCCTTAAAAGCCCCAAAAAGTTCATAGTAGCTTATACCAAATGG
 TCGTAGATATTTTTCTGAAAACCCCAMCCGCTGCAANCTTGT CATGAACC
 AAAGTATTCAAATGCTTACAGGGRACCTTTATTGATAACAGSTGSYTGTR
 AGGACTGGGTTTTGTCTTYGCAGATTATTTTTCCAAGACATATAAAATTA
 ATCTGATATTGGTTGGGCGCTCTGATCTTGATAAAGAGAAAGSWWTGCSR
 RATWCRGRMTYKKGKWWMAATCAGGTAGTCGAGTGGCTTATGTT CAGACGG
 ATATCTGCGATGAAAAGAATCTCCAATTGGAATTGGATATTGCCCAAAAA
 TATTGTGGCCCTATTCAGGGTGT CATTCATGCCGCGGGCATCATTGATCA
 GAAGACAATTTTTGAAAAAGTCCTGAAAACCTTCAAGCAGTATTAGCCC
 NTAAAATTCAGGGTACATTGATTCTGGATAACGTATTGTCAGCGCAATCA
 CTGGATTTTATATGTTACTTTTCTTCAAGCTCGGCTCTATTAGGTGATGC
 AGGATCATGTGATTATGCAATGGCTAATCGATTTTTTGATGGCCCATGCAC
 AGTATAGAAATACCTYGGTATCTGAARGAAAAMSCAAGGGRAAGACMCTG
 KTTWTTCAATTGGCCCCGCTGGAATGTGAAAGGAATGGGATTGAATGGACT
 GGAATGAGAACGTGAAAMCARAGTTCTWYTTAAGTCCAAGCGGGCAASG
 TCTATTGGACATAAAGGAAGGTGTGAGGTTATTGAACACATTRCTGGCT
 CAGGATTATTYTCAGTGTCYTAWATTGGSTGGKAGGAAAAACNGTATCW
 AACAATTTTTTGGGTCTCACACAAAGATGTTTCTNACCTCACAAGTGAGT
 CAAGGGCAGGMAGTRAWGAACWWASRRSWKKMYKKRRASSKSYAMYAAAC
 GAGCTGAGATAGAAGACTTTAAGTGTTGAAGAATGTATTATTTTGGACTT
 AAAA ACTCTGATTACAGAGCAACTTAAAATACCCATCAGCTCATCTGGAT
 GTAGAGAGTAATTTAGCAGATTTTGGTTTTTGATTCCGTCAGTTTAGCAA
 CTTTTCCCGTGSTTTAAGTATTCMCTATCATTYCAAWAWTACGCCRTSTK
 TATTTTTTCGGATATCCTACCATAGAGCGTYTAARCCGTTATTTTTTAAAA
 GAACMCMCTGCGSTTATGGAGGCGTTTTATCAGCAGAAAAAACATYTTWA
 TAGTAACAATACVCTGTCCG : TATAGTCCYTCATGTCAAAGAAAAGCCGW
 CAACTGATCTAATATCATCCARC : GCCTCT : CCTTTTATTGCAGATCCAT
 TGCCCCCTCAGGSTATTGAGAGTATTGATGAGCCTATTGCCATTATTGGT
 ATGAGTGGTCGTTTTCCAGAAGCGCGTACGG : TTAAAGCAATGTGGGAGA
 TTTTATCCGAAGGTAAAAGTSYTGTCAGGAGATTCTTATAGAGCGCTTT
 A : ATTGGCATGAATATTATGAACACCCATCGGATGATGTTYGAA : AA : DB
 TAATAGTAAATGGAGYGCCTGCATTCCTGGTATTAAAGAATTCGATCCAC
 AATTTTTTCGAAATTTCTCCAAGAGAGGCAAAAAARCTGGACCCTCTTCAA
 CGGCWCTTATCACAGGAATCMTSGAATGCATTGGWAAATSCTGCTTATGK
 WWWMYWACRCWKWGMTMWTWARACRATGGGATAYKTKKATTGGTRTTGAW
 SMAGGKTWTTATMMRRRYMWGMTCAATKMRGWYGACSGCACACWTTWAWC
 CATMAKRMTATTTTRGCATACCMGTYTGSCAGTWYTYWTTARAKYTTAAT
 GGSCMWRSSATGGCWRTWAAWRCCGCWTGYTCCTCCGSYWTGGYYGCRMT

FIG 15B (cont'd)

FIG. 15B (cont'd)

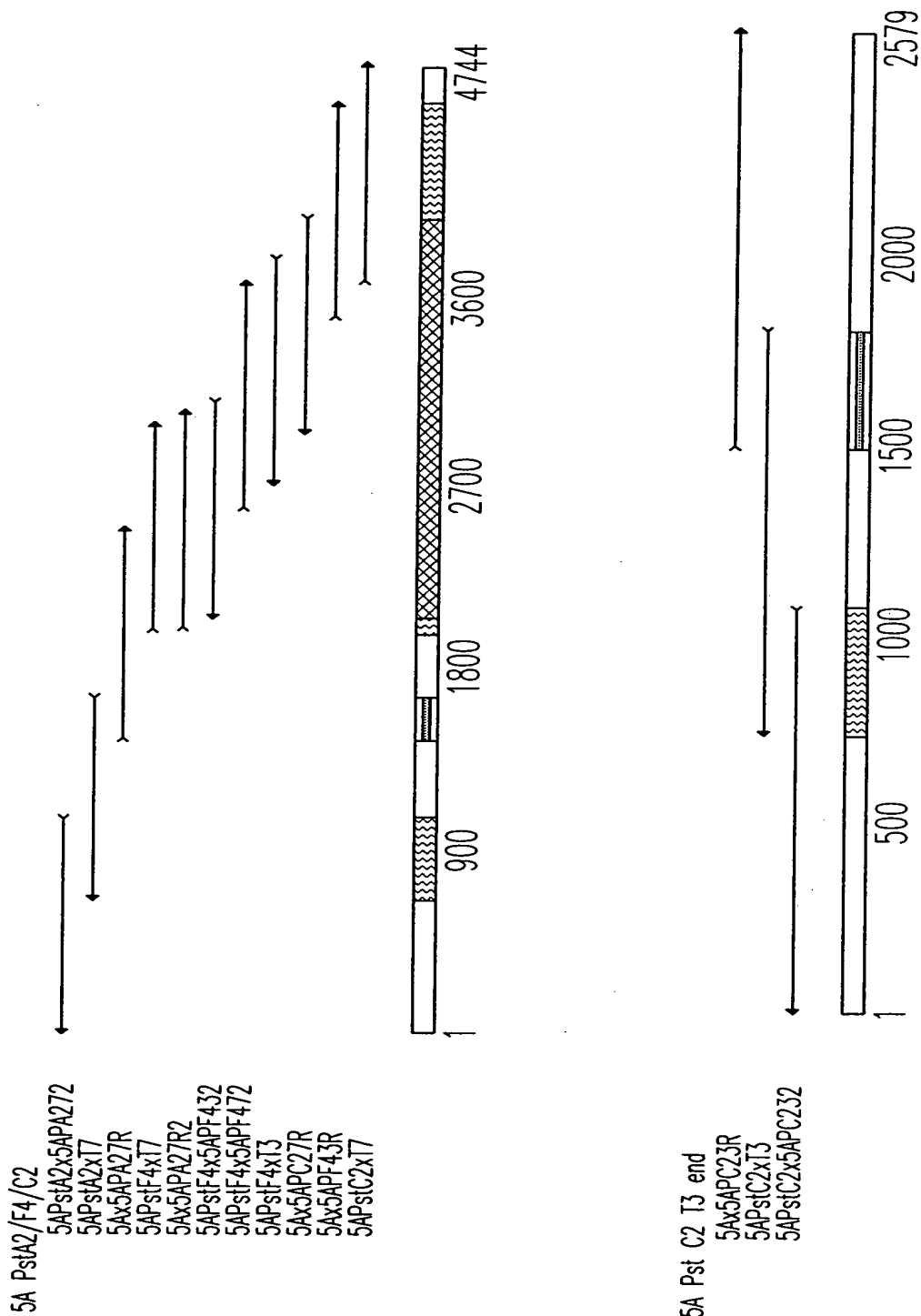


Fig. 16A

5A Pst A2/F4/C2 Overlap Sequence

GNGATGAGATTGATGAGAATACTTAATTTGGTCGAANAGGCCATTACNTC
 TATGATTCTTGGTGAATTTATAAGCCAATTAACCNGTGATTTAGTTTGGA
 ATATGAAAGAACCCGTTTTATTTGACTATCNGAATATTAATACTTTATCG
 AATATGATCGAGAATGAACTCGAAGCTGTTGAGGTATAGTTATGTTAGAA
 GTTATTAATAGATACTGCCATGGATACGTATTCGTGCCAGTGGTATTGGC
 CNTAGAAGAAAAAGGGTTTTTTTGACCTTTTTTACAAGGAATAGATACCTTA
 CATTTGAAAAAATAAAAAACAGAATTAAATGCTAATAGTGGCCATCTTCAA
 GTAGCCTTACGCATGTTGCAGTCTGTTTCATGGATATCATGTGATGATAA
 AGGGTATGTACTAACAGATGCAGCGGACGAAAGAAATAAAATATCTAGTG
 ATTTTATAGAGCTTTTTTAATTTCTCTATGAGTCGCTATTTAGAAAATATG
 GAAAGGCATGGATTAAAAAAATGGATAGATCAATCCGGAGATAACTGGGG
 TATTTCAAACCCCTGTATTAACCGATTTTTTTGGATGGTGTTTTAATTATTC
 CCTTATTACTAGAACTGAAGGAAAAATGGTTATTTTGATGCGTTAAAAAAT
 GKWAATAGTCTAAATAAAAAATTATTTTTTAGGNTGATATCGAACAATCGG
 NTTCGCAAWGAAATTATTACACTATTTTAAACAAAAGAACTGGCTCCAAG
 AAGAATRAAGAGACGTTTTACTTCACAAAANTCTGGTCAATTTNAYCACT
 CAACGAATTTTATTACCGCAATCCATTGCTTCTTATAAGCCCATGTTTA
 TCTCGGGATAACGGAATTAATGTTTGGAATGCTAGGAGTATTTTTTAAAA
 AGGGATTGCATGGAGAGGAGAGCCATGTTGACCGAACCTTAAATGTTATT
 GGTAGTGGTTTTCAACATCAAAAGTACTTCGCTGATATCGAAGCGTTAGT
 CATTCAGTTATTTAATGATAMTTTKTACGATSRAYWSCCGAAATRKRTTS
 CRRATATGGGTGTGGTGATGGGACTCTACTAAAAAATATTTACAATATT
 ATCAAGGAAAAATCTGCACGAGGAAACGTGTTGAATCACTATCCCGTGGT
 ACTTATTGGTATTGATTATAATGAAGCCGCTTTCAGGAAACTAACATA
 CACTGGCAGGTGTTGATACAAGACACTATGTTTTTAAAAGGCGATATTGGT
 GATCCTGAAGGAATGATAAGTGATCTATATGATTTAGGTATTAAAGATCC
 TGAGAATATATTGCATGTGCGTTCATTTCTGGATCATGATCGTCCTTATA
 TTGCACCCACAGAGGTGATGAATATTGAAGCACGTTCAAAGATATTTGAT
 CAGGGCGTGTATGTTGATTCAAGAGGTCAAGCAATATCGCCTGTGGTTAT
 GATACAAAGTCTGGTGGAACATTTTAAACGCTGGTCTTGTGTAAAGACGA
 AACATGGCTTGCTTATATTAGAAGTACATTCTCTTAACCCTGAGGTTGTC
 AACCAATATTTGGATGAAAGTGAAAGTTTGCATTTTGATGCCTATCATGG
 TTTTTCTCTCAATATTTAGTATCGGCTGAGGATTTTCTAATATGTGCTG
 CAGAAGCTGGTTTTATTTTCTAAACCTGATGTTTCTCAAATATATCCAAGG
 AACTTACCTTTTACTCGAATTACCCTAAATTTTTTTTGAAAAAAGCCTTA
 TCAAATTCGTCACCCGAATGAAAATGATTTGTCTGCATTGATGGATTTAG
 AAAAAATTTGTGACCTAATAATCAATGTTTATGCATTGATGACCTTCGC
 CAACGCATAGATGAATACCCAAAAGGTCAATGTGTTTTAGAATTAAACAA
 TACCATTGTTGCAGTGATTTATTACAAAAGTGATTAATAGAGTGTTAG
 GCACTGCTGCAGGTGTTTGGCARSWSWWTGSCMDHGAATRTGBDWDCA

FIG. 16B

DATTTVTABATHACTBGTTTATCAATDTAWTRCCCAAATAAAAAAAGAA
 TATGCCATMCAATTATTACAGTTTATCTTCTATYTATCATGGTGTTCAWA
 ATGATGTTGAAGATGTTATKGGTATTGATGAATGTTATCAGTGCTTAAAT
 GAGAAAACGATACAAGCAGGCAGTTTATGGAAAGTGAGTCAGTTGATGT
 TTTATATTCCAAGAGTAGAAAAACATATTGCTAAGTATCCCAATAGATAT
 TGGAGTAAATGCTCTGGATGCAGAGCAGGAAATGGGGTTGTTTGGTGCTA
 AGTGGTTACTATCTATTTTTTCAAAGCCAAGGAGTGATGAAAAAATCAGGT
 GAGTATTATCAAAAAGATCAATT : GAGGTTGATGTTAAATATTATTCCAA
 AATATTATCGATTATTTGAGTGCTTGCTACTCATATTT : GAAAAAAGAAA
 GCTTATTTCAATTCAAAAAAATAC : GGTGCAAACACTTTCCAATATTGAT
 GAATTTGCTCTTAACGATCCATTGGT : TGAGTTTGCTTCGT : TTAAGCGT
 ACGTTTTCTCTCAATATGCTAGCCTTATGCCGWTTCACGATTAATGGC
 ATCGTGCTTTCTCGGTATTTGGAAATATTAACAGGCAAAATACAGGCGC
 ATGACATTATTTTTTCCAGAA : GGAGGGATGAATTTATTTGAAGGTATTTT
 TAAAGGCTATCAACTTTCAGACTATTTTAATCATATTCTCGCAGAGCTGA
 TTTATGAAAGGGCTA : ACGCTCTATCCGGTGGGTAATATGAA : TAAACA
 ATTCGTATTTTAGAAATAAGGAGCAGGTACCTGGTGGTGCCAACAGAGTT
 TGTATT : GAATAG : AGCTTCMCCGCT : CTCGAATGGTTATAAGAGTTTTC
 C : TATACTGGATATCT : CGTCC : TCGTTCCTTCGTATGGGAGAAAAGT :
 AGATTTTYCCGATAAATAT : CCCTGGT : TGCAATATAAGGTGTTAGATAT
 : TGAAAG : CAATTTAGA : TGCACAAGGGTTTTACCCTGATAGCTTTGATA
 TT : GTGTATGCATCTAATGTT : CTCCACGATACGAAAWTATATACAGTAT
 ACCCTTTCCCAAAGTGAGTCACATGCTAACGCAAAATGGC : TTGTTAATG
 TTGAATGAA : TTTACTC : GGATGAA : GGATTTGTTACTGTTTACCGGTGG
 TTTGTTAGATGGCCTTTGGTTATATGAAGACCTACCAATCGATTGGATA
 ATGTCTGCTTGTTAAATGTTGATCAGTGGCGATCTATATTATTTAAATCA
 GGCTTT : AAAAATGTTAAAGACTTTGTTTTACCTTTTGAAAACTTAATA
 TTGAGCAAAGTCAAAGTATTATTGTCTCTGAGTGGATTAATGAAGACCTG
 TCTAGTAATG : TTGAAAATGTGGTGAAAAATAATCA : TTGTTT : AGAAAT
 ACAAATCACTC : TGAT : CCGATTACT : GTGGAG : AATAAAATTAG : TTA
 CAATT : AAAAGACAA : TCMCWTCGTTA : CACAATAGTATTGGAAGAAAAT
 ATTTTATATAAAATTTTAG : GGGGATAAAAAGAAAATTAT : GGATTTTCT
 CC : TAAACGCCCTTTGATTGGAGTTTATGGGTTGGATTATATTTCGAAC
 CTAC : TTGGAA : TTAAAGATCATTACTCGGKRAGCMTTYTTCYATAAAAC
 TRGAASMTACTTTKKTKYMAWKATKRAAYRMTKSCKKMRSCTMTYTGW
 KWCMTCCSAYATSATTCMAGWTRASCYTSRWATTRTCGMTARAKWCCCTA
 TTACGGAAGAGATAATGACTGGAGGTACGTCAAGGGTAARAACAGGGCAA
 TCGAATSAAKATGAACCTATTGCGATTATTGGTATGTCYTGTATTATTCC
 AGGTGAGGTTACGACAGTTGATGAGTTCTGGGAATTATTAATACAAGAAA
 GACATGCCRTTCAACCCTTACCTAAGGGACGTTGGCAATGGCCAKAAGGT
 GTTGATCCATCGGGAGCACAACTTGGCATTGATCAGGGTGGATTTCTGGA
 TGGTATTGATACCTTTGATGCCSACTTCTTTCGTATATCGAGAAAAGAAG

FIG. 16B (cont'd)

CGGAGTTWATGGACCCTCASCAAAGAAAACCTACCTGGAATTAARTTGGCA
GGTCATASAGCATGCCGGATATAAACCCATCGGYTTTTTCTGGTCAAAGA
NATYGGYATCTATGTGGGGTGCTTTGTACCCGGTAATTTATATGGGAGTT
ATTTAACTAAAAGTGACCAAANGCCCTAAAAACCAACCGGNAAGGCCTAT
TTKCATGACCARGTARTANATTGTTGTTTCGYTTTMCSCCAATAANAATT
TTCCTATTTTNTATTAATTTTTTTAAARGTGCCCMSCSTCCTCTWTCTGAT
WCCGNGCTTGTTCAARYAGTTTTAGGTTGCCTWTTTGACCCAANCARTTT
TATGCGNATTCAATTCGGGGNANGGNGTGAATCAGGCNTCTGGTGGGNTG
GGGAYCAATTWAATRTCCCTCCSMRTGAWACCGGTTTCTTNATTAYYWA
GCAGGTNTGTTNTCAAATCNGGGAATGTAAACCTTTNGATCCACCGCCC
GTTGGTTTTNTNCCTGGGNAAAGGGGGCGCTNTTCTTTTTTTNAATCNTT
TTCTCANCCCNATTTTAAAANGATTGTTTTTTNGGGGTTTTAAAGGGGGG
AGATNAAAATNGGGGGCAANCATTNNTTACGGCCCTAACCTNNG

FIG. 16B (cont'd)

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"010" 010

FIG. 17A

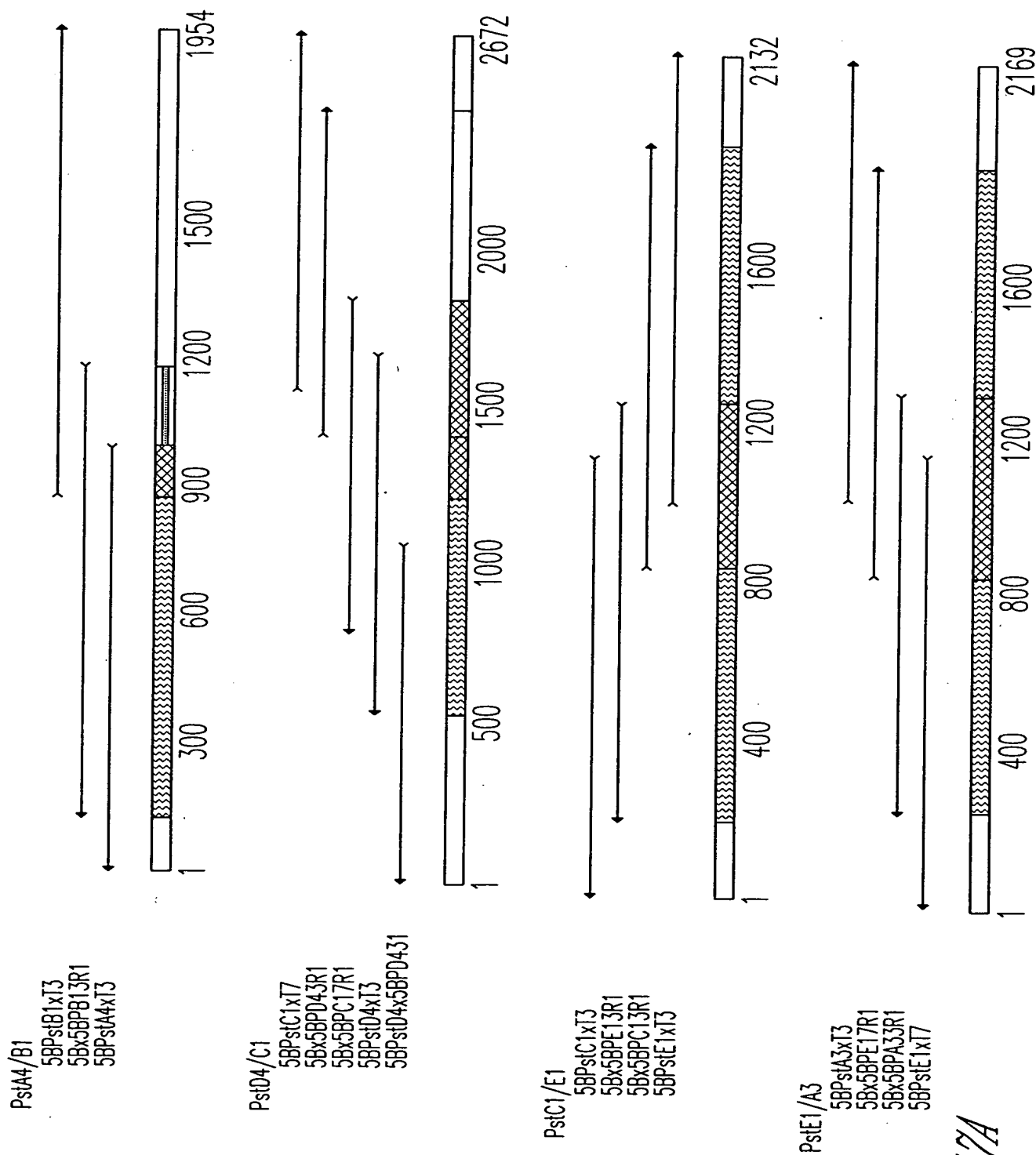


Fig. 17A

*5B PstI Fragment Overlap Sequences**5B PstA4/B1*

GANGATTCTNCCNCTNCCCATTGAAAAGAGGATGGATTNGANCATATGG
 GTGTGCCTGCAAGAAGATAAGTCAATATAATGTAACCTCAGAAAAATCAAT
 TCCCAAAATGAATACCCCNCAATCWATACAAAAAAWATTGAWAGATTTTT
 KGGTKGACATTACTAACTTTTTSGAGGCNAAGACATCMATCCMRGCMGGA
 TGCCTGGTGACTATGGTGKTGATTCCATTATTAGGTATGAGATTTYTTAA
 TCGAATTAACCYCCACCTTTAAWATAGAAGCTGATGCTTTATTACTAACA
 GAAGGAACGATTMACCAGTATATCTCATAAARKWCMTTCTTTTATTGTTG
 ATAAAAAAATTACCCAATGTTACCAAATTTTGGATTAGAAAATGATTCT
 AATAAAGAAAATAAAGGCTGGGTAAAGCCTTCTTTTATTGAATTTATTAA
 ATTTGAAATCAATCCTGAATATATAGAAAGCAGTACAAAAAATAAGATT
 ACGCGATTCTTGAAAATCTAATAAATAATGGAGTTGGAGTTTGGAGAGAA
 AATAATCATCTATGTTTTGAGTTTTTTTTATGAAACTCATACAAATGAAAC
 AATTAAAAAATAGTGTTTTTCACCCGAAATACTTTTTAACTCTCTAGATA
 AAGGTAAACGATACTTTCCAAGTAGCTGCCAGCAAAAAACAGTCTATAT
 CAAACGGAAGTTGAGAAGTTTCCATATAATCTTATTCAAGGATTTAGAGT
 GGAAATGCCAGTCAATATTGAAATTTTAAATAAAGCATTTAATCATTG
 TTAACACATATTCAATTTTCAGAACAAAAGCAATGTTGATCAATAAGCAA
 TGGATTCAGGTAATACATGATGGTTTTATCAGTAAGATGCGAAGA : AATTA
 YATACGAAGGATTATCTGCAGGAAAAGATTTTACGCAACAATAAT : AG
 TATTTCAAAAAGAGCAAGGTAAAAAATTATTTGATATCGATAATCTGCCT
 TTATTA AAAATTTATTTTATCCATAATGGTAAAGACTTAGCAGCTATTTT
 TGTTTCATGCGCATCATTTTTGTGCCGATGGATTTACATTTTTTTCTTTTC
 AGAAAGAATTTTCATGATACTTGTGAAAGTATTATRAACGGANTGGRRWAT
 CCGGAAACGKGTTCSAWAAAGTGATGGCTGAATATGGCCACTTTGCATTG
 TGTGAATATAATCCCAAAAACAAGGAGCTGACAAAAAACTGGCTTGATAA
 AATTCGAGATAAAAATTTTTCTTTAAATTTAAAGATAAGAAAGACTATG
 TCGGTCAACTGTCAAGTGGAGAAAAAATTATTGAGCTAGAAGTTTCTGTA
 AATATGCTGGAAAAATTAAGATTATTTAATGATGCGAATAATACCACACT
 GACGCAATTGCTATGTTGTGCTGTTGCAATTTTACTGTATCGCCTCTCGA
 GGCTACCAGTACCCTTGCAAATGGTCAACAGCCGTAGAGATAAAATAGAA
 TTTGAAATAATGATGGGTGATTTTGCATCAACTCTGCCCTATGGATTTTA
 GGAACCTTTCCAAAAGCATTCTCTATTTCCNGGATGGTACCTTTTTTTAA
 GTTATTGGAAAAANGGAAAAAGGCNTTNAATTNTCCCCCNAGGATTTTTT
 TAAANGGGGTTTGATNNTTTNTCNGGGAACCCTCAANAAAAAATAATT
 TTTTTCCAAAAAAGGGGCCCTTAAANTCCCCATTAAGGGAATTTT
 TTAAATTTTTTAATTTCCCGGGNAAAATTATTTNTTTAAATTCCGGAATT
 AAGGCCNAANTGGAATTAATTGNAAAATTTCCANTTTGGGTTTTTAAAA
 AGGGGAAAAANCCANNAATTTGGGTTTCTTAAAAANAAAAAAGGGG

FIG 17B

0975938-013101

GGNGGCCCCCGGTGGGTTCNTTNNTGGGGGNAAAAATTTAAAAATTTAA
TTTN

5B PstD4/C1

ANCCGAAAAANACCNAAAGGGNNGCCGGCCCNCTGTCCTNCGAGTGCATNA
TAAAAAANCCAGTNATAAGNNGGNACAATANTCATGCCCCGCGCCCNCC
GNAAGNAACCTNANTGGGTTNAAGGCTTCAAGGGCATCGGTCAAGGAACC
TTTCGGCGGGCTTTTGCTGTGCGACAGGCTCACGTNTAAAAAGGAAATAA
ATCATGGGTCATAAAATTATCACGTTGTCCGGGCGCGGGCGACGAATGTTT
TGTATGCGCTGTTTTTCCGTGGCGCGTGTGCTGTCTGGTGATCTGCCTTCT
AAATCTGGCACAGCCGAATTGCGCGAGCTTGGTTTTTGCTGAAACCAGACA
CACAGCAACTGAATACCAGAAAGAAAATCACTTTACCTTTCTGACATCAG
AAGGGCAGAAATTTGCCGTTGAACACCTGGTCAATACGCGTTTTGGTGAG
CAGCAATATTGCGCTTCGATGACGCTTGGCGTTGAGATTGATACCTCTGC
TGCACAAAAGGCAATCGACGAGCTGSRCYMSCRMATYKGKMCMCCGKMW
CCTWMRARSTTWTTCSCAAWRRAGKKTYWTTMAWMAAGSMCSCYGSKRKY
GSWWWTGGWRCTAWCCACGMARCSSMWWTYGAAAMACCKSRKCYGGNTKW
CSRAWAWMWACMRSMYCASCCTTGGWAWMMARMRWSMTGASYWGWCKCWG
AAMAAGKTWACCSTCRGKGCCGMTWWGKKCAAWKTTWMACCYSRWRWRR
YMCMAAMATTGARRCSTTGMYCGRACCCSGMTGAAAAA : : CGCTGH : TG
: : AATGTRVGGCGT : TGGATGTCHCAAAGCAAATGGCASCAGACAA : GAA
AGCGATGGATGAACT : : GGCTTCCTTATGTCCGCCCGGCCAKTCATGAT
GGAATGTTTCCCCSSGGTGGTGTATCTGGCACCAGTGCCGTCGATAG : T
A : TGC : AA : TT : GA : TAA : TT : ATT : ATCATTT : G : CGGG : TCCTTT : CC
GG : CGATCC : GCCTTGTTTACGGGGCGGGCGACCTCG : CGGGTTTTTCGCTA
TTTATGAAAATTTTCCGGTTTAAGGCGTTTCCGTTCTTCTTCGTCATAAC
TTAATGTTTTTATTTAAATAACCTCTGAAAAGAAAGGAAACGACAGGTG
CTGAAAGCGAGCTTTTTTGGCCTCTGTGTTTTCTTTCTGTTTTTGTCC
CGTGGAATGAACAATGGAAGTCAACAAAAGCAGAGCTTATCGATGATAA
GCGGTCAAACATGAGAATTCGCGGCCGCATAATACGACTCACTATAGGGA
TCATATTTTATGGTGTTATTAAAGGGAGTGCCATCAATCATGGTGGCAAAA
CCAATGGCTATAGTGTGCCTAATCCGGATAAGCAACAGCGTGTCATTAGT
GAGGCTTTGCAGCGGGCTCAAATAGCTCCTCATCAAGTCAGTTATGTAGA
AGCGCATGGTGCGGGAAGCCGTTTAGGCGACCCAATAGAAATTACGGCTC
TCAGCAAAGCATTTAACAATGTTAGTGCGCAATTTAATGTGAAAAGTGCA
GCCAATCAATCGTGTTTTATTGGCTCGGTAAAATCCAATATAGGAAACTG
TGAATCTGCAGCAGGGAC : TGCCAGTATTAGCAAAGTATTGCTACAAATG
AAACATGGGCAAATAGTGCCGTCCTTGCAATTCAAAAGAACTGAATCCCAA
TATTGATTTTTTCAGCAACTCCCTTTGTGGTTAACCAAGAACTGCGCGATT
GGCAGAGACCGCTGATTGATGGAAAAACAGTGCCGAGAGTTGCGGGTGTC
TTTTCATTTGGGGCAGGTGGTTCCAAT : GC : TTACGTGGTGATTGAAGAG

FIG. 17B (cont'd)

0975938"013101

TATATTGCGAAGATACCGACAAATAACACCAGGGAATCTATAAACCATAG
 GTCTATTATTCCATTATCAGCACGAAGTCTGAGCAGTTGCGGGCAAATTG
 CCAGTAGATTGCTGGCATTATTGAAAAGAACAAGCAAGACAGCGTGTT
 ACCCCCTTAATAGATATTGCTTATACATTGCAGGTAGGACGCGAAGCAAT
 GGATGAACGCTTGGGGTTTATTGTGAGTTCAACCCGATGAATTAGTCGAA
 GAACTACGAAGATATCTTCAAACACACGATGATATGGAAGAGCTTTATCG
 AGGTCAGGTTAATCGATATGAAGACACCTTTCTTACTATGGCGGCTGGAT
 GGAAGATCTCTCTTGAGGCTATCCCACCCATTTGGGATTAAAAAACGAAA
 AACTGGTCTTAAGTTTAATGCCAATTATTTGGGATTAAAGGGGTCTTT
 GTGGATTAAWTTKGGGRKRAGWTATASSWTKKYTTMCCAAARGRKGTW
 KTCCYCSGCRMATKARMKKAYTACCTRTCCYTTYGGCRGSMATATTTTAA
 RGWTKKTAMMSWTYRNMCCCTCWTWCCTYTTTTKTGRCCCCAGGGNCCAAA
 TTTATTTTNGTTTGNNGGGAATTTNGTTTTTAAAAAGAATTCGGTTAANC
 CCACCTNCCNTTAAACTTTTCATTTTGGGGGGNAATGGGTTTTATTGGNAA
 CCCATTCCNAAAACCAAAAANGGGCCTTTTTTTTTTTCCATTCCNAAAAA
 ACCAAATTTTGGCCCCTTTTTTGGGGGGGGGAAAAAAAACCCNAANGG
 GAAAAATTNTTTTTTAAAAAA

5B *PstC1/E1*

NNNANNTTTCCNATTCCCTTGGGCGGAAATTTTTTGCCCAGGGNCCGNAT
 AACCAAAGGACCCTTTTTTCNGGCCCTTAAAAAACCCAATTTNCCCCNT
 TTAATCCCCCGAATAAAAGAACCTTTCCCAAAAAAGGGNAANTTGAAN
 TGGGGGGNANCNTGGGAAATCCCAAGCCAAAAAAGGCCCAAYMTCGCC
 WARAACRKKCCAWWAATSSSGAWAASMCIYCCAGAWARWATTKWTKRWA
 MWRAWCYAGYWWMSCAMATCRGRTGTTWTATGGRRSSSRGWMYAWWTRAA
 AARYMYTCCAWYKTKTKSSGRRTCAATKATGSSRKWTYYTCAAYMTTGG
 GACTCMCIYMTMMMWWTGAAAACCMYWATTATAKKTRTAAGSGGGCC
 AAATAATCAATGTTGGATATGGTTAAMCCGATAAAAAAAGCCTCAATAA
 ATTTTNCTGCCAACAACTAAGACAGCTCTACAATAAACATAAAGCAATA
 ATGAGTCCCTGTGATTATTTCCCATGAAAAAACAATGGCATTTTAATAG
 ATAGATCTCATACTGAATCGAATATTGCCATTATAGGTATATCAGGGTGT
 TTTCCGGATGCAAAAAATGTTAATGAATTTTGGGAAAATTTAAAAAATGC
 TCGTCATAGTGTTAAAGAAATTCCTATAACCGGTCTTGGGATATTGATA
 ATTACTTTGATACTTCTTCGCAAACACATGCACAGGAATATGTTAAACAA
 GGAGCATTTTTAGAAAAATATCGATCTTTTTTGATCCGCTGTTTTTAATAT
 TTCTCCGGTGGAAGCAGAGCTTATGGATCCAACGATTTTTTCCTTC
 AGGAATCCTGGAAAGCGATTGA : A : GATGCTGGTTATGATGCATCAAAC
 : TAAGTGGAACG : T : TGGGGGGTATTTGCCTGTGCAAAGGGAGACTAC
 CATGCCATTATTCACAAGCAGGATAAACTCGTATCATGACCACTGACTC
 TATGCCCTCCTGCCAGGTTTGCTTATTTATTGAATTTG : : TTAGGGCCTGC
 AGTTCACGTTGATA : C : GGCTTGTTTCATC : GTCTTTGGCAGCAATTGCTT

FIG. 17B (cont'd)

ACGCATGTGATAGCCTCATTCTTAGAAATTGTGATGTTGCCATTGCAGGA
 GGTGGAAATATCAACTCAACTCCCAGCCTTTTGATCAGTTCAAGTCAACT
 TGGTTTGTGTCAAAGATGGCCGATGTTATGCCTTSDATCAACGTGCAA
 ACGGAACGGTATTAGGGGAGGCGGTASCATCGATTATTTTAAAACCCTTA
 CAACAAGCGATTGACGATGGTGATCAGGTCTACGGATTAATTAAGGGTTG
 GGGAATGAATCAARATGGAAAAACCAATGGTMTTACTGCTCCTAGTGTTA
 AGTCACAAATTCAKTTGGAAACGGATGTTTATCAAAAATTTATGATWAAT
 CCTGAACATATTACKATGGTTSMAGCCCATGGAACCTGGGACTAAACTASG
 AGATCCCATTGAGGYTCAGGCATTAMCAGAAGCTTTTCASAAATATACTY
 AAAAAACAKGGTMTTGTGCACTAGNGTTCCTTTRAAAARWAAATATTGGAC
 ATACNTTTTTCCCGCTGCTGGRAKTCKCTAGATGTTAATMAAGGGTTTTG
 TTGTCCATTTWCANCATTYACMARGWTTTCYYTYCRTARTTWWTAATTYW
 MAARSTATNAMTTWTTCAWWATTCTATYGTNAAWWACCCYWATTTTKKW
 KTAAMAMCAGCYCATWWTTWWYSSSKGTMATTWWNYCCNCTTTWTRW
 WMCCCMYTTGCGRRCSGTTTTTTTTCGTKKKTGTTTCRWCAKAGAATCTM
 MMSYCCTTTTYTYGCMMAANMRNNTTAAACMMMTWRCCTTTTYTTTRGR
 KGGSGYCCCCCNCCCNGGGGGAANCCCCCAANTGGGTCCCCNNTTTTGGG
 GGGGGGGNTTTNGNNAANGNAAAATTTTTTTTTTCATGCCCNANAAAAGG
 TCCTTCCGCAACCTTTTTTAAAAAATAANCCCNCCCCNAAAAANTTGGG
 NATTTGGGANTGGGAATTAAAAAGGCCCTTTTTTACCCCCCGNGTTTA
 ATTTTAATTCCCCCTTTTTTGGTTCCGGGCC

5B PstE1/A3

NNACCAATTTTCCGAAACCCAAGNCATTTTGAAAGGGGTTTTTGGGGCCC
 GGGGTTGAAAAAANGGGGTTTTTTGGCCCCCCCCCENNAGNAANTA
 AAAATGGGTAAGGAACNCGCCCCCCTTTGGAAAACCTTCCCCNAAAA
 AAAATAAAAAGGCNNTTTGGAATTTTTTAACNAAAATNNCGGGGGNTGGGC
 CNTTTAAANAACCCCCCNNTTNCAAAAAATGCGARRGGKGGGYCTCCWR
 RNAYTYAAAWAWGRAMSGKTAWYTMCCWAKTGRGGGGWNTTWTATCAWT
 AAAGGNSSGGGGKTYTAWKWTTTAWRAARRGGRAGCTTTAGRAAWAWAAW
 ARWCMGTKGKKTAAARAGARATTKWWAARRRAACTGGRWTRAAKTWWW
 RWRTTATWATANAAATRKKWAAKGGWRTATAGAGGGAAAAAATTTAAA
 GGATAAATGAARGAAACCCATCWCCATTTATTTTCCAAGASGACCAAGA
 AATGATAGAAGTTGTTAAATTTATGGRTGCGTAAAAAGAAATTTTCCCA
 AWTTTTAAWTYCTTTGGGTAAAGGATTAAACMCTTGRTTGGAAGCAATT
 ATATGGTAAGAACMTCCAGCTCGTATTAGTTTGCCAWGCTATCCTTTTG
 CCAAGAGCGGTTATTGGTTGGATACTGATAAGTTAGTCGACGGTAGTTA
 TYTCAACCCTAGRCAAGAGGGAATWAATACAGATAGTGATAAGTTTGATG
 AAAAGCTTTATGAATCCTTGTTGGACAATCTTTTTTCCAAAACCTATGACM
 CCTGATGAAGCTATTAAGTTAATGGAAGAGGAGGTATCATGAAAAATTA
 ATTAAATTGATTTATGAAAAAGTTTTTGAAAATAAACTATCAAAATCAGA

FIG. 17B (cont'd)

AGCCTTGTCGTTGATTAGTGGATTGAAGGCGAGCAATACTACTATCCTTC
 ATCCCCTTATACATGAAAACACGTCAAGTTTTTTTGAAAAAAATTCAGT
 TCAACTTTTTCTGGTAGAGAATTTTTCTTTCGGATAGATGCTAACCTTAA
 AAAAAGTGTATTATCTCCTGTAACATACCTTGAAATGGTTTATGCTGCAG
 CAACAAAGGCAATGGCTGGTGAGAAATTTTCAGCGCAAT : TTAAAAAAT
 TGAGTGGCAATATCCAGCTATTGTTTCATGAAGAGTCGATAACAGTTCATA
 TTCGTTTTTTTTTAAAGATCCAAATACCTGGTTGGATACAAGTGAGGAGAAA
 TTTTATGCTATCAAATTTACACAATTTCAAATAATCAAGAAACA : A : GC
 GATATTGTTTACCAACCGGGGTGTAATAGATTATGATCATAAAAATAGTGA
 ATTAAGTCCACTTGATATTTTTTCACTACAAAAGCATATCAGTGAATATT
 TTCTAGACCCTAAAGAGGATAGTGATTTTTTTTGAAAAGAGCGATAAAAGT
 AATGAGCCCTATTATCAGAGTATTGAATTGTTACATATTAATTTTCAGAA
 AGAAGCGCTTATAAAATTATCGTTTGATCACGTATCAGGATACATATAAC
 CATCAAGAGTCATTGGTTTTACATCCAGATATACTGGAGTTGGCTTTACA
 ATCCTGTAGCTTCTTATGCCTTGATATGGCAGATACTGGAATCTGAGTTT
 TTCGGGGGAGTTGCAGCCCAGTGAGTGGTAGATGCTTTTATCAAATNCAT
 GTCTCGGCTGGTCCAGGGACCTCAAATGGTGGGKTTTGGGTACCGGCTT
 AACARSYTTCCATGGAAGGGTAGGGNTTAWATAGSCRCANTATTTGGCCY
 TKGGTGRTGGAATRAWRGTWATKCSKGGGWCCWGSTAMWWAGGGTTGGG
 TTYTCAAAACCAWAWRAAMMSKGTTTYTTGRRKWWTTTTTTSSMMMGCC
 SCNAAATTNGAACCCCCCNNGNGTAAANCCCCNNGAAATTNNTNTTTTTT
 TTTTNNCCCCGNCCCCAANCNNAGAAANGAACCTTTNCGNGGTTTTGGG
 CAATTAAATTTAATTAGGGCAAACCCCCCNTTAATNGGAAGGGGGGNCCA
 NTTGGGNGGTTTTTTTNGGAAAAAGGAAGGGNAAATTGGGGNNAAAAAGG
 CCCCCCAAANTTNGGTTTTTAAAAAGGGGAAAAAAAATNAACCGTTTAA
 AAAAATTNNCCCCCAAANT

FIG. 17B (cont'd)

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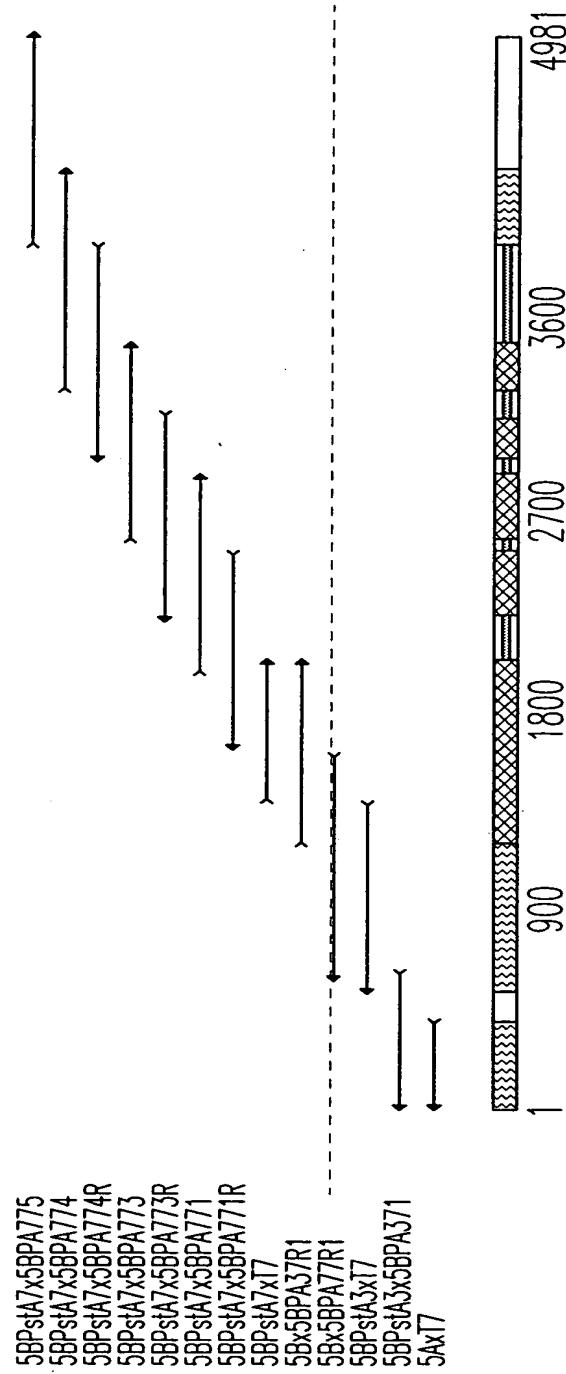


Fig. 18A

GCACCGTTTGGGAACGTTATGGCATCGATTTCATTGATTGTGATTTCAGGTGAA
TCAGGCGTTGGCGGCTATTTTTTGATGCGCTGCCTAAACACTGTTATTTG
AATATCAAACGATAGACGCGGTCGTGGCTTACTTGTTGAGCAGCACCCGC
CAGGCATGTAGGGTGTGGACGGGGTTAACGGCAACGGGTCAAGCTCAAAG
AGAGGGTGTCTATCTCCTCTACCTCATCAGCGGGTGTGTAACCTGTGACAC
CGAGACAGAAAGAGGGTCATCCTATACAGAAAGACATCAAGTGCCGAGAA
CACCCAGTGACAGACGAGCCTATAGCCATTATTGGTCTGAGTGGACATTA
TCCGCAAGCGAATAGTTTGGATGCGTATTGGGAAAACCTGAAGGCAGGAA
AAGATTGTATTTCGTGAAATTCCCGATGACCGTTGGTCGCTAGACGGTTTT
TTCCATGAAGATGTTGAAGAAGCGATTGCGCAAGGGAAAAGTTACAGTAA
ATGGGGCGGTTTTTTTAGAGGGATTGCTGATTTTGACCCTCTCTTTTTTA
ACCTATCGCCGCGAGAGGTGATGACGATCGATCCACAGGAGCGTTTGT
TTACAGAGTGCCTGGGAAGCTGTGGAGGATGCCGGTTATCGCGTGCTCAG
CTTGCTTCGCAGTTTAACAAGCGTGTGGGTGTATTTGCGGGTATTACCA
GACGGGTTTTGATTTTTTATGGAATACAATCGGATCSAGCTSBTYT:YCGC
WT:ATACTTCT:TTACKCCAGGTTTAAAARGCCWMGWTCAGCT:TKTTT
TSGGGTTTTTTAABTHHGCGGGKGGGKTTTTTKVSCCVWAT:AGCA:CSG
DCGGTTTTTKMATTTTTTTAWTGGRAA:AC::CAATCGGGATCAAC:TCT
TT:TCCGCTTATACTTCTTTAGCTCAGTGG::CT:AATCGTGTGTCTTT
ATTTTTTTGGGTTTACAAGGCCCAAGTC:TGT:CTATTGATACCATGTGCT
CCTCATCTTTGACGGCAATACATGAAGCCTGCGAGCATCTGCATCGCCAA
CGATGTGAACTGGCTATTGCGGGGGGAGTGAATCTTTATTTG:CACCCTT
CAACCTATATTAGATTGTGTACTTTACGGATGCTTTCCAAAGAGGGCCTG
TGCAAAAGCTTTGGTTATGGTGGTAATGGGTTTGTACCGGGAG:AGGGGG
TTGGCGCTGTGTTGTTGAAACCCTTG::TCTAGAGCCATTCAGGATCAGG
ATAGTATATATGCCATTATTAGAGGGAGTTGTGTTAATCATGGTGGCAAA
ACCAATGGTTATACTGTGCCTAATCCACATTCTCA:AGGCGATCTTA:TT
CGTGAAGCTTTGGA:TAAAGCTCA:G:GTTAA:TGCCCGTAT:GGTCAGT
TATATAGAAGCC:CATGGTACA:GGTACAGAGTTGGGTGACC:CAATAGA
GGTAAGAGGCTTAACGCAAGCCTT:TCAACAAGATACTGATGATGTTGGT
TTTTGTGTAT:TGG:GTTCAGTTAAATCTA:ATATTGGTCATC:TGGAAG
CTGCCGCTGGTATCGCTGGGCTGAGCA:AAGTTATTCTGCAGATGAAGTA
TGAAAAAATAGTGGCAAGCCTACATGCAGAAAGACTGAATGCCAATATAA
ATTTTGAACAAACTCCTTTTGTTGTTTTCAGCAATCACTTAATGAATGGGAA
AGACCAAACCTTCATGTTAATGGAAAAATCAAAGAATATCCTAGGACCGC
GGGGATCTCTTCTTTTGGTGCGGGAGGGACGAATGCACATATAATAATAC
AGGAGTATATTCCAGAAGTCAGTCAGACACGACAATCAGAGGTCAGGAAT
AAACCAGCTCACCCGGTGGCCATTCTGCTATCTGCGCATACTTCCGCTCA
GTTACTGAAGATGGCCGAGGCACTTTTACTATTTATTTCGTACCATAGTGA
ATAATATGGACTCATCCTATTTCGGCAGGGGATGAGATGACTCACTTGGTA

FIG 18B

AATGTAGCCTATACATTACAGGTTGGACGTGAAGCTATGCAGGAACGCCT
 GGGGTTTGTGTGAATTCCCTGAGTGATATTGAAGTGAACTACAAAAAT
 TTATTGATAAGGAAAATGATATTGAAGACTTTTATCGGGATCAAATCAAG
 ACTAAAAAAGAAATCTCAGCTCTATTTAATTCCGATGAAGATTTGCAGGA
 AGTGATTAAACAATGGATGCGACAAAAAAACTATCCAGGCTTTTGTAC
 TTTGGGTTAAGGGAGTTCAGTGTGATTGGAACCTTCTTGTATCAACATATG
 CGAACCAAACCTTATCGGTTACATTTACCAACGTACCCATTTGCTTATAA
 TCGATATTGGATTGATGATAATAAAAAATCAATCGACTGTAGTTGAAA
 AAACCAACACTATTATTAAAGAGAGAAAAGAGCAAGTTAGATTAGAGCCG
 CTTGATTTTATGGAAAGGAAAAAACTTAATGTCCATGAAAAAAAGCCATT
 TCATTGTTCTTTATCAACTCAATCAGAGGCCTGGTCCGGGGCGAACACTC
 AGACATCCAGTGGTAAACAAAGACGATCTTATGTACAGGTGCTTAAACAA
 GACGATATATTAAGGGATCTTAAATCAGCGCTGCCTACAGCTGTTGAAGG
 TATGATACCAACATTAAATCGAACTGGTGTATGACAGAAAGCTTAAGCT
 CCTACTCAGAAGCATTGCAAACTATGCTGGTATGTGTGGTGGAGAAGTA
 TTGGACTTGGGGTGTGCCTATGGAATTGCAACGATTGCAGCGTTGGAGCG
 AGGGGCTCAAGTATTAGCCGTAGATATGGAGGCACAGCATCTGGAAATAT
 TATCAGACCGTATTCGGGATGAAGTGAAGTCGCGTTTATCGACACAAGTA
 GGCAAGTTGCTGGATCTTCATTTTGATCAAGAACGTTTTGCTGCGATCCA
 TGCGAGCCGAGTGCTACACTTTTTAAACCCACAGGATTTCCAGCAAGCAT
 TACAAAAAATGTATGGCTGGTTAAACCCGGAGGAAAATTATTTATTGTG
 ACGGATACCCCTTATATGGGTTATTGGGCGAGCAAAGCAGGGGTTTATGA
 AACTCGTAAAGCAGCAGGGGATTTATGGCCAGGCTACATAGATAATGTTG
 GTTCTCACTTTAATACTAAAGAGATAGAAGGGGCCCAACTCTGATCAAC
 CCGATGGACCCGGAATACTGCATCGTGAATGCAAAAAATTTGGTTTTCA
 TGTAGAAGAGACTGTTTTTTTTGCAGGAGAAGCCTTTGCACTAAATAATA
 GTTTAGAAAAATCAGGTAGAGAGCATGTTGGTATAATAGCATTGAAGCCG
 GAATTGGAAGATTCCGACAGGCTTGAGAAATCGCTATTGCCAGTACGGAA
 AACTGAAACGGAGAATAAGGAAATTAGCCTACTGCAAATACAGACAATGC
 TTAGGGAGAGTCTTGAATTTGAATTGGATATAGAGCCCGGTATGTTGGAT
 GAGTTAAAACCTTTTACAGATTTAGGGTTGGACTCGATAAATGGAGTCAC
 CTGGATACGAAAAATCAATAGTCACTATGGATTATCTATGACTGCGACGA
 AAGTATATGATTACCCAAATATTATTGAGTTGGCAGAGTTTTTAAGAAAA
 CAAATTATTTTGAATGATGAAAAGCAGCATCAACCATCTATATCAACAAT
 ATTTCCCACTTCATTGGATGAATTATTGAAAAAATACAAGAAGGTACTT
 TAGGGATTGAAGAAGCCGACCAATTAATTGATGAACTACCTGATTACCAT
 CTAGATATGGAACCTCCATGAGTTGTTATAAGGGAAAGCGAGGTATTTTTG
 TGTCACACCGATGGATGGTAAAACCATTTTGGCTGAAAAGAATTTAGCTC
 AAATCGGCGCAGCTTTGCTGCGTCCGAGTGATTTGACTTGTTATGGTGAA
 CTCAACTATGCTTGTACGGCATTTCCCTTACATAAGTAGGTGAAAAATGGA
 AACAATTAGTGTAACCAATTTAGAGACAATTTGAAAAGTTTTGTAGAAC
 AAGCAGTTAGCACGCATGAGCCAATTAAAGTAACGCGCAGAGCCAGTGAG

FIG. 18B (cont'd)

FIG. 18B (cont'd)

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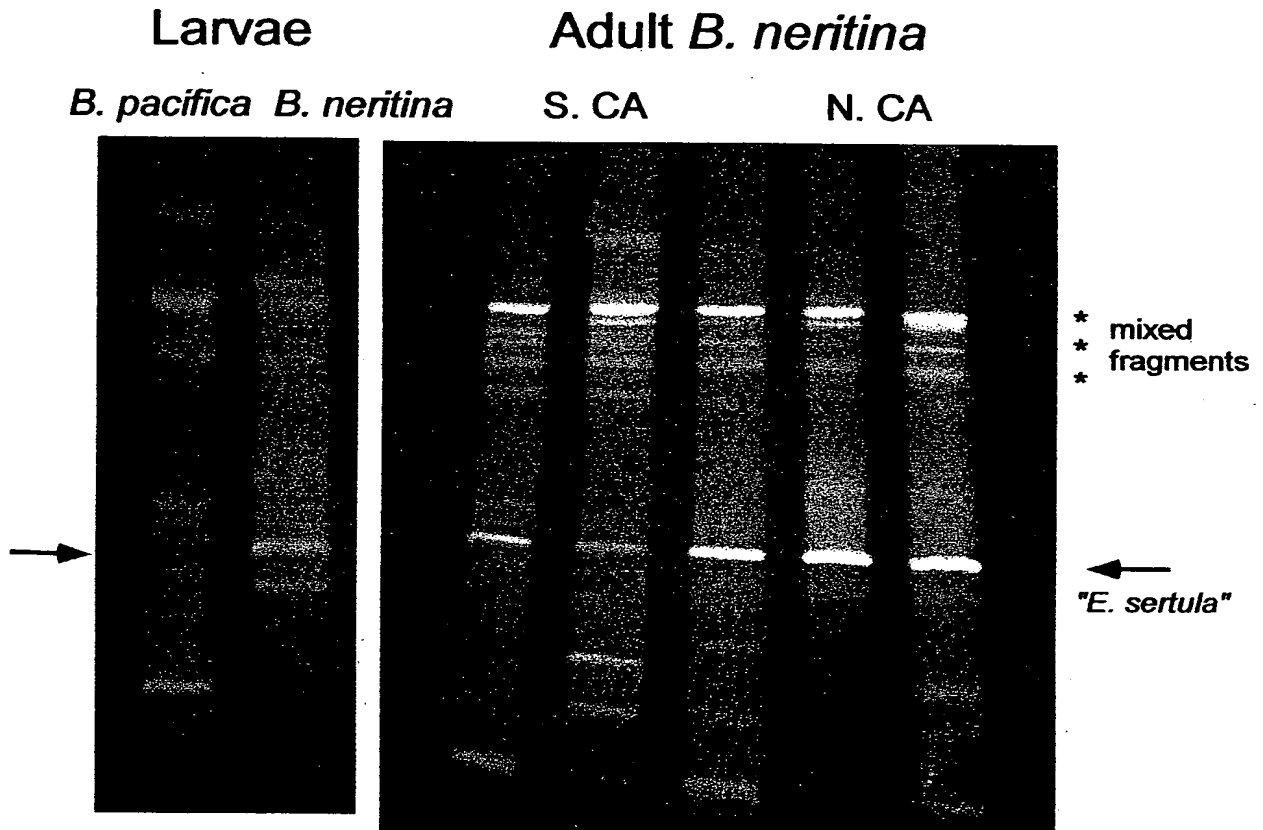
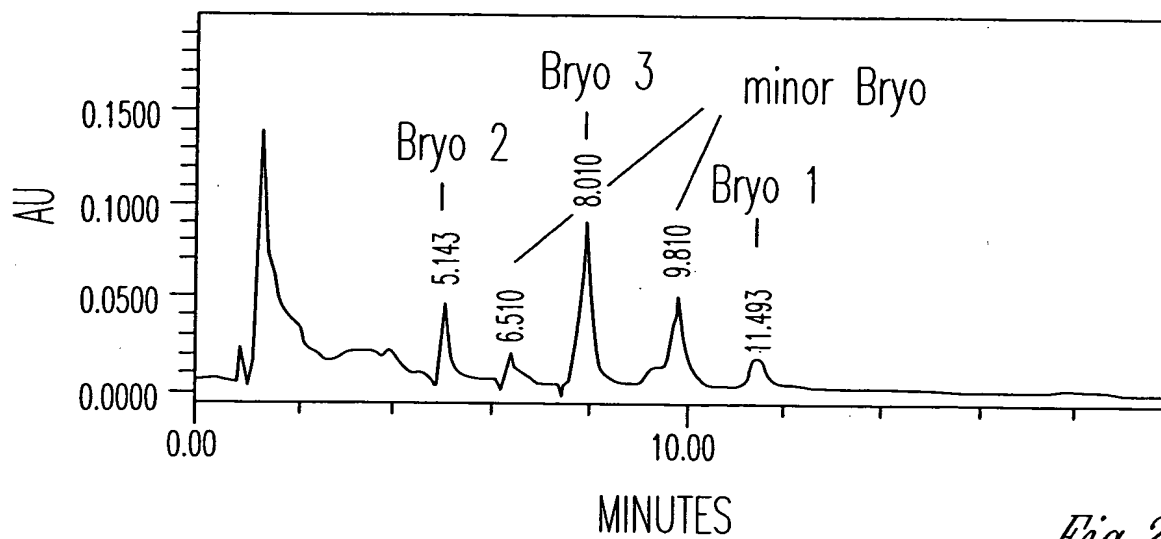
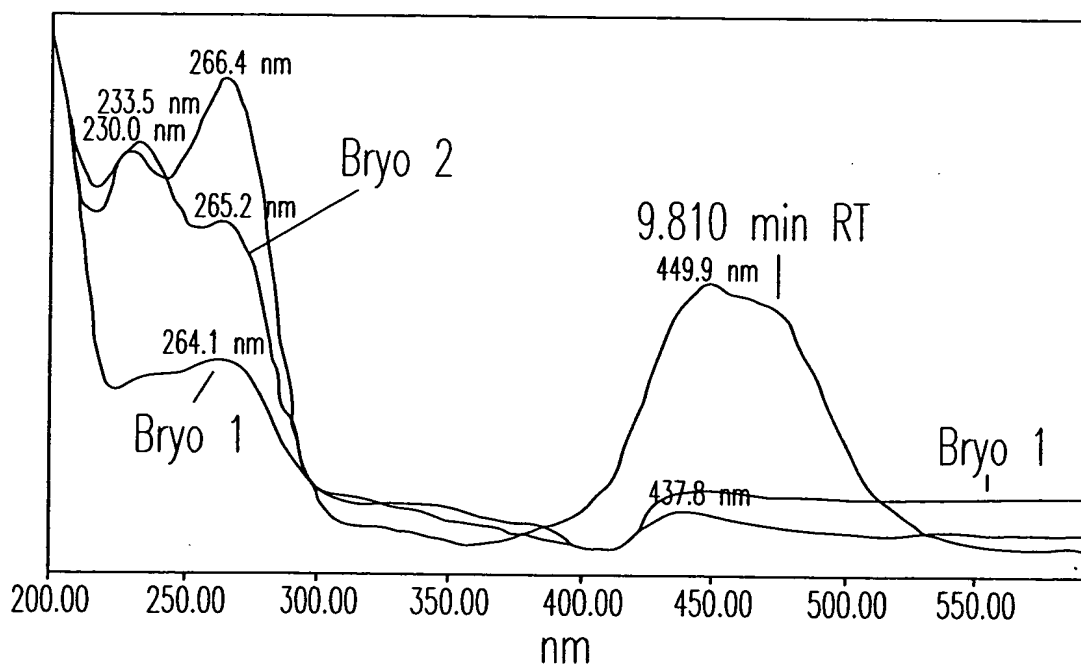
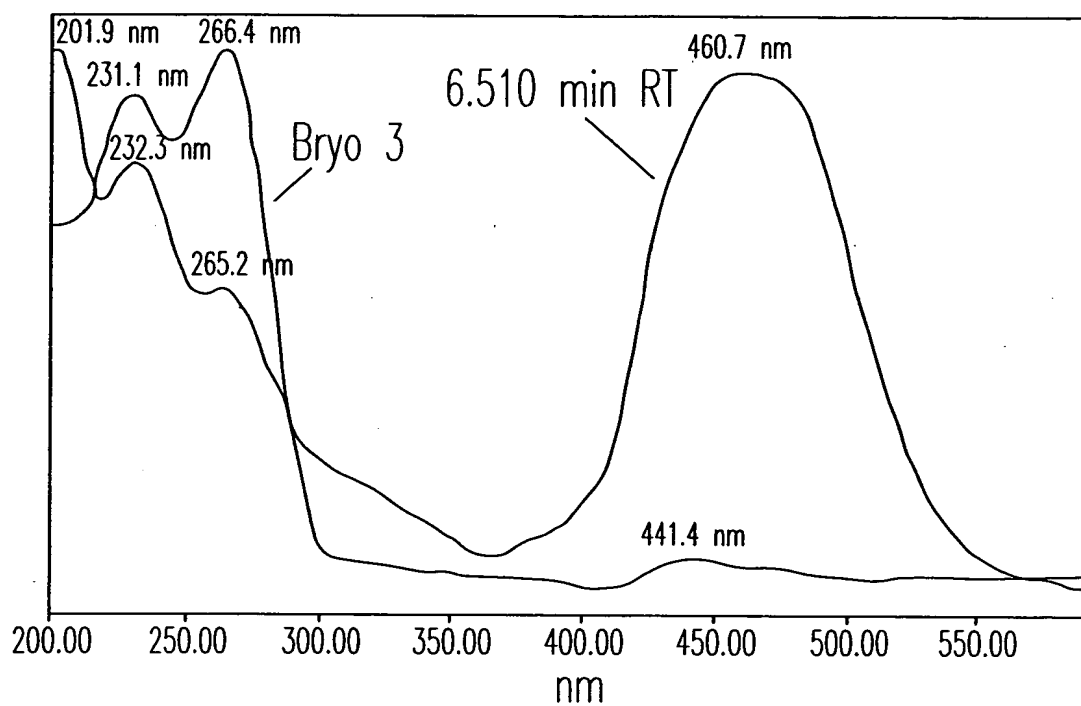
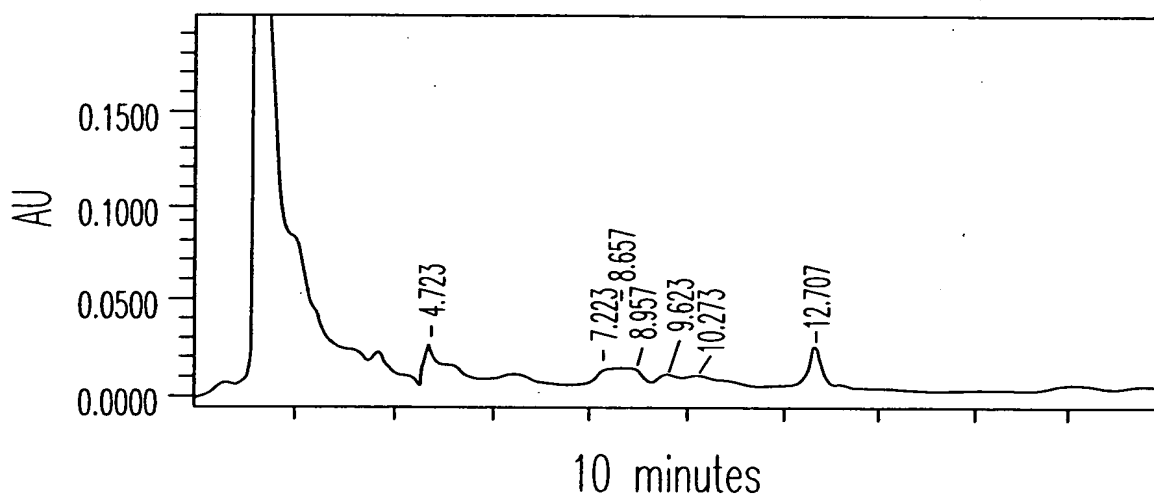
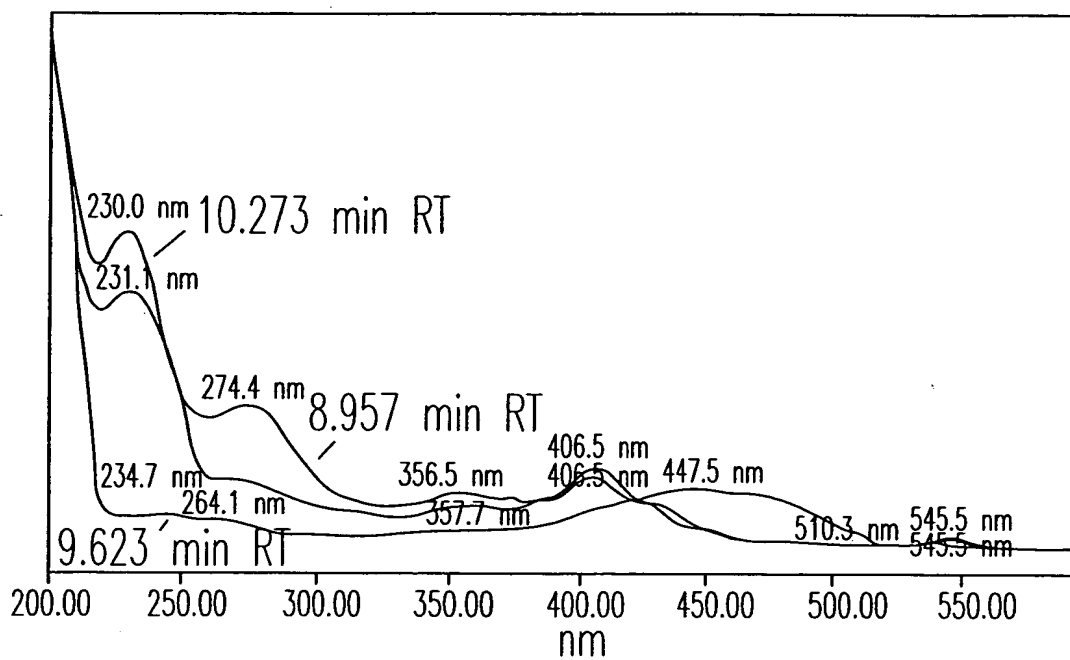
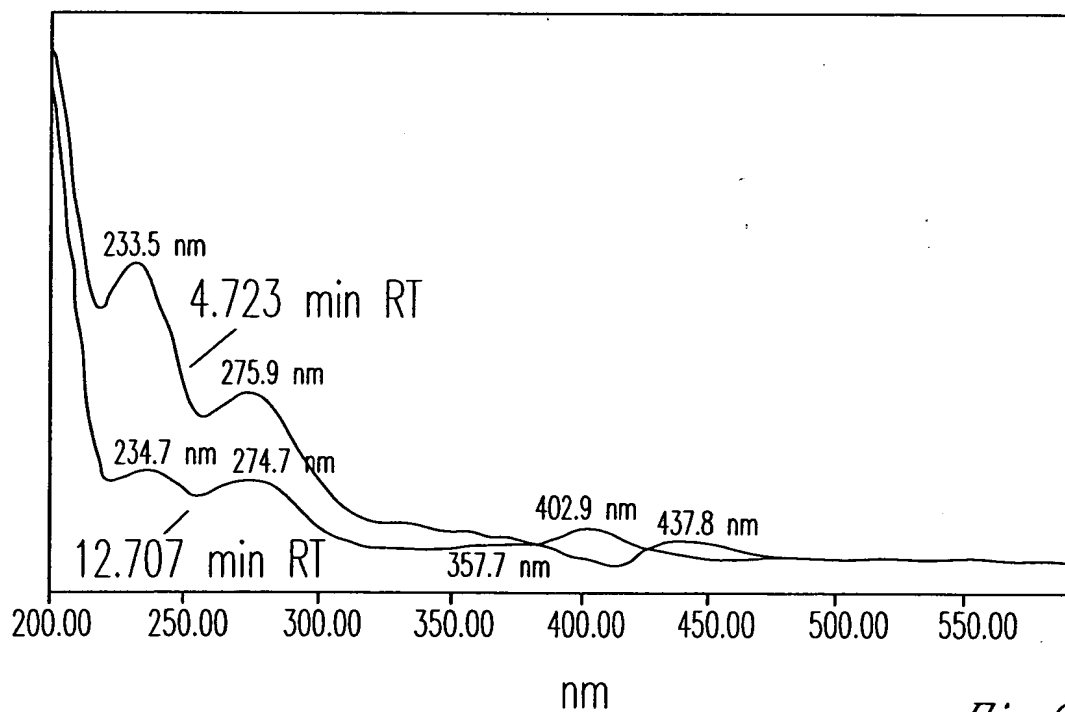
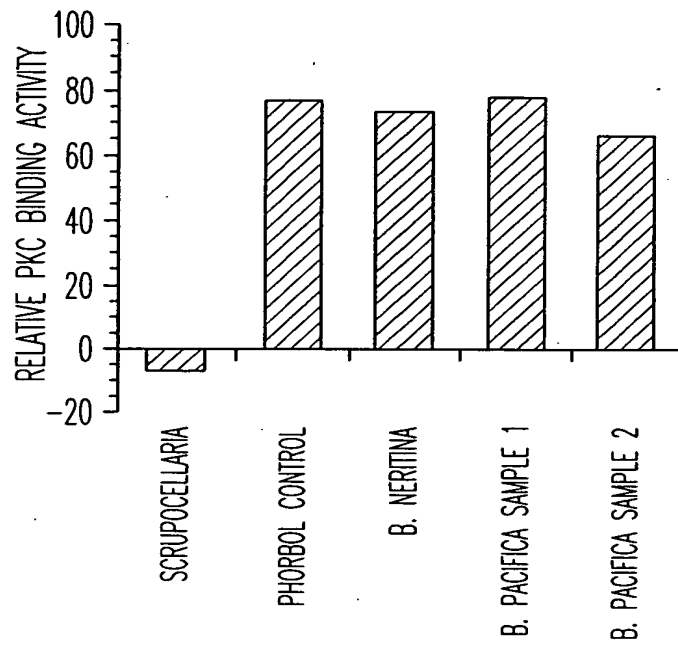


FIG. 19

*Fig. 20A**Fig. 20B*

*Fig. 20C**Fig. 20D*

*Fig. 20E**Fig. 20F*

*Fig. 21*

T07E10"8E6S/260

aaattgggtg atccgataga agtcgagaca ttggcagaat cgtttcgagt ctatacggac 60
aagcgtcatt actgtgctct ggggtcggta aaaagtaata ttggtcattt ggggtaggt 120
gctgggtag cgggcgtgac caaagtattg ttgtctttgc agcatcgcat gttaccaccg 180
acgattcatt gtgaggatgt aaaccacacg attgcgttgg aaggtagccc cttttatac 240
aatacgggaat taaagccttg gcagtctggt gacggtatac cagcacgggc tgggtgtcagt 300
tcttttgggtg tcagt 315

FIG. 22A

aaattgggtg atccgataga agtcgagaca ttggcagaat cgtttcgagt ctatacggac 60
aagcgtcatt actgtgctct ggggtcggta aaaagtaata ttggtcattt ggggtaggt 120
gctgggtag cgggcgtgac caaagtattg ttgtctttgc agcatcgcat gttaccaccg 180
acgattcatt gtgaggatgt aaaccacacg attgcgttgg aaggtagccc cttttatac 240
aatacgggaat taaagccttg gcagtctggt gacggtatac cagcacgggc tgggtgtcagt 300
tcttttgggtg tcagtgggtac caatgcacat cttgtattag aagaataatac tcaccgagta 360
acatcaccat tacaaaatac tattttacc cagaacgggtt tgttattgt tccactatct 420
gcaaaaaatg atgaatgctt aaatgcttgt gtcgaacgac tgttattttt tctaaaaagc 480
aggcaatccg atacatataa aaatatcc ttaagtata cagctcctat attgttagat 540
ttagcatata ccctccagggt cagtagggaa gcgatgacaa aacgagttgc cttttagtg 600
aaaacaacaa tagagttaat ggaaaaatta aatgcattta tagaaaaaca aaatactata 660
aaagcaagta atataaaagg ttgttactac tcttcgacta aaacatcgag tccatttgat 720
aatgaatcga ctgatc 736

FIG. 22B

cgattagggtg atccaattga attggcagca ctctcgaagg cgtttgagga gggaaacacaa 60 SEQID NO:13
 cgaaaaacagt tttgcggtat cggttcagta aaatacaata ttggtcatct ggatgttgct 120
 gctggagtcg ttggtctgat caagacagca ttgtcgtgc agcacggtt gttgcctccc 180
 acgatcaact acgaagcacc caatcgggaa atcaattttg aacaatcacc ctttcatgtg 240
 attgatgaac tcacggagtg gcgggggtcaa ggtggaccac ttctgtgctgg tgtcagctcg 300
 tttggaattg gt 312

FIG. 22C

caattgggcg accctattga actgcaagca ctggccgatg tgtatagagt tgataactgg 60 SEQID NO:15
 cgaaaaaaca cctgtgccct cggctcggta aaaagcaata ttggccatac ctctgcggcc 120
 tctggtgtgg ctggtatata caagtgctg ttatcgctta agcatcgaca attagtagcg 180
 agcctgcatt ttaatagcgc caatcaccac ttgattttc aacagtcgcc tttttatgtc 240
 aataccacgc taaggccctg ggatcaagca gagggactag aagaaagccg ccgccgggct 300
 gcggtcagtt ctttgggtgt cagt 324

FIG. 22D

gagtatggag atccaatgga attgacggct gcagctgccg tctttggacg aggacgaaat 60 SEQID NO:17
 cagaaaaatc gtttgctggt cggatcagta aaagccaata ttagtcacct ggaagcagcc 120
 gggggtattt ctggactgat caaagcagta ctggcaatgc agcatggcgt gattccacag 180
 caattacact gcaagaagacc ggtcctcat atccccctgga aacgtctgcc tctcgatttg 240
 gtacaagagc agactgtctg gccggaaagt gaagagcgga tcgcgggtgt aacagcgtcg 300
 gattagcg 308

FIG. 22E

caacttggcg atgaaataga agttcgcgct ctgagtaaag tgtacggaga ttacacagtcc 60 SEQID NO:19
 acgacatacc ttggtgctgt aaaaagcaac ataggtcatg ccaacgcagg agcgggcatt 120
 gctggtttta taaaacgggt gctgtctctt taccatggca aaattgcacc caatgcaggc 180
 aataccgagc ccaatgcagc tttgaacctt gacgcgtttc attttgcatt accaaaaact 240
 ttgcttacat ggccggagtg tgatgttcga cgggcagcga tcagctcact gggttttggt 300

FIG. 22F

gccttgggtg atcctattga atttggcgca atcaaggctg tgtatgggcc tggtcggtct 60 SEQID NO:21
 tctcgcgtgg tgctcgtgc acttaaatcg aacatcgggc atttggaagc gactgcaggc 120
 gttgcagctc tgattaaggc agttttggtt ctcaacatg gctgggctcc ggccaatttg 180
 cactgtcaca aattgaatcc gcttctggat atcgacggct tcaatgttgt gttcccgcag 240
 tctgagaccc ccttgcacag ctctctgcag ctacttggcg ggtatcagtt cgttcggggt 300
 tggc 304

FIG. 22G

acttgggtgat ccctattgag gtggggggctc ttacagaatc atttcgatcc ctatacagaa 60 SEQID NO:23
 aaaaagaact actgtgcctc gggatcggta aaaagcaata tcgggcatct ttaaccgcg 120
 gccggagtat ctggagtagt caaagtgtta ctgcgtttga aacataagca acttccacct 180
 tcctgtcatc tggtgaaaaat caatgagcat atcaaccttg aggacagtcc attttatc 240
 aatacggcat taaagaaatg ggaagtatcg gaaggtgagg ctgcagggc cgcagtcagc 300
 tcgtttggtt cagc 314

FIG. 22H

ccactcggcg acccaatcga gatggcagca ttaaacacagg cttttgggac tcaaaagaaa 60 SEQ ID NO: 25
 aaatactgtg cgatagggtc ggtgaagagc aacattggtc atgccgatac ggcggctggc 120
 gtcgctggtc tcatcaagac ggtgatggca ctcaaggcgc gtcagatacc gcctagcttg 180
 cactttgaga ccccaatcc gcagatcgat ttggccgaca gtccctttta tgtaaatata 240
 accttgaaag attggaacac caacggtgtt ccgcgccgcg cgggcgtgag ttcgtttggc 300
 atcggc 306

FIG. 22I

gtgggtcggag atccgattga ggtcgtggga ctgacgaaag cctatcaagc gcacactcag 60 SEQ ID NO: 27
 gaacgtcaat actgcggact ggttcgggtg aagacgaata ttggccatac ggactcggct 120
 gctggcattg ctggacttct caagatcgtc atggcgatga agcatcgta actgccgccg 180
 agcttgaatt ttgaaacacc aaatccagac ctggatctgg agaatagtcc gttcttcata 240
 cagacgaagc tgaaggattg ggaaagtgtg gggcctcgtc gtgccgcgtt gagttcgttt 300
 ggtttgggt 309

FIG. 22J

gatggaactc attaccacc acaaaaaagt ccgtttcttc aacgcggttg atttaattaa 60 *SEQID NO:29*
ccagctaatac aacgaacaac aaaagcagca aacgggcaaa ctcatcagag ccttattgca 120
ggtggattgt ttaagtattg atgaactcgg ttatatccca ttccctaaat ccggtggggc 180
gttgctcttc cacctcatca gtaaacggta tgagaagacc agtattatca tcagcaccac 240
tctggccttt ggggaatgga acagtgtgtt tggatgacc aagatgacca ccgcgttatt 300
ggatcgtatc acgcatcatt gttcaatcat gtaaaccaag catgcgtcgt atcgttttaa 360
gcagagtcag aaacagacat gaaagtagct ttacccggtg ggacagtgtt agatgcaaac 420
cccgggtcag ctttaagtgc aatttgaaa ccaatgtgat aattgtggct aagatcaata 480
aaaataaaat ttttttattg attatgatga tccacgttaa aaaaaatact ataaatatga 540
aataatatat caactttatt ttgatggtc gttgttgagg aatttttgt gagttatcga 600
gatattttga aggttttaca ggatgaaaa attagtttg aagaggctaa atataagtta 660
ataaaaagaa aagataaaaa atcaaaacag cgtttaaatc atgatcgtga attaaatcga 720
tcgatgaata ttacgccaaa aatagtgaat aattacggtt tagtattatt gggcggtcac 780
ttatttgaag aactccgtct gagtgaatgg aaagctgcca accctaacc taatgaagt 840
agcattcagg tcaaggcatc cgccattagt ttaccgata cttgtgtgtg acaaggttta 900
tatccatcac actatccctt tgttcgggc ttgaaagtat cgggagtgtg tcgtcaagt 960
ggtgaacaca taaccgactt acacgtgggt gatgaagtta ttgcgttcac aggatcatca 1020
atgggagggc atgctgccta tgtgacgggt ccacaaagatt acgtggtacg aaaacccaag 1080
gacttatctt ttgaggatgc ctgtagcttc ccattggctt ttgcgaccgt ctatcacagt 1140
tttgcacggg gaaaattatc tcacaacgat catatcttga tacaaaacggc gacagggtggc 1200
tgtggtttga tggcacttca gttggcgctt ttaaagcagt gtgtgtgtta tgggacctcc 1260
agccgagaag acaagcttgc actcctcaaa cagtgggcac tgcctacgt cttcaattat 1320
aagacgtgca atattgatga ggagattcaa cgcgtcagtg gtcacgagg tgtcgatgtc 1380
gtcttaaata tgctcccagg agagcatata caacaagggc tgaatagttt agccaaggga 1440
ggccgttatt tggaactgtc gatgcatgga ttgttaacga acgaacctgt cagtctgtcg 1500
tctctgcgtt ttaatcaatc cgttcaaac atcaatttac tggggttact caataagggt 1560
gatgatggct ttatcgggtc tgtattagcg caaatgggtt cctggattga atcagggtgat 1620
ttagtgtcaa ccgtgtcgcg tatttatccg ttggatcaga tcggtgaagc gttacgttat 1680

FIG. 22K

gtctctgaag gggagcatat aggtaaaagtc gttgtgagtc atacagcgac agagccgatg 1740
gattgcagac agcgctgtat tgacaatgta ttgaagcaag ggcaaatggc ggccttgacc 1800
gcgacagggg gaaaaagccg ggtgtggggt ggtactggtg tcaatgacaa accgtctcct 1860
gctgttggt tagaggagcg tttattggaa gggatagcgg tgattggtct gtcaggccag 1920
tatccgaagt cgaagacact ggagcaatth tggcagacc tagcggatgg agtggattgc 1980
atctcagaga ttcctgctga tcgctgggtc ttagaagagt attactgcc aataccgaa 2040
gggggtaaaa cgtattgtaa gtggatgggt gttttggagg acatggattg ttttgatccg 2100
ttgttttttg cgatatctcc tcgggaagcg gaagtgatgg accacagca acggttattt 2160
ttagagaatg catggagtgt tatagaggat gcggggatta accctaagat gttatcccg 2220
agtcgatgtg gggatattgt tgggtgcggt gcgaatgatt acagcgctct aatgaacagt 2280
agccactcaa cgagtctcga attaatgaag gaattaggca acaactcttc cattttatct 2340
gcacgaatct cctacttttt aaatttaag ggccctgtc ttgcgattga taccgcatgt 2400
tcttcttcat tagtggccat tgccgagtcg tgtaatagtc tgggtttggg tactagtga 2460
ttggcggttg caggtggagt gttgctgatg ccagggtccat cctacatat aggtttgagt 2520
catggagaaa tgttatcagt agatggtcgc tgctttacct ttgaccaacg ggccaaacgg 2580
tttgtaacct gagaggggtg cggcgttgtc ttgttaaac gcattgtcga tcggtgcgt 2640
gatggtgatc ccattcgtgc agtgatacgg ggctgggggtg tgaatcagga tggtagaag 2700
aatggtatta cggcgccgag ttcaaaaagc caaagtgtc tcaggcaaga ggtttatcaa 2760
cgttttaata ttgatccatc gagcattacc ttagtcgaag cacacggaac ggccaccaa 2820
ttgggtgatc cgatagaagt cgaggcattg gcagaatcgt ttcgagtcta tacggacaag 2880
cgtcattact gtgctctggg tcgggtaaaa agtaatatgt tctttgcagc atcgcatgtt accaccgacg 3000
gggatagcgg gcgtgaccaa agtatgttaa ccacagatt gcgttgggaag gtacccccctt ttatatcaat 3060
attcattgtg aggatgtaaa agccttggca gtctgggtgac agtataccac gacgggctgg tgcagttct 3120
acggaattaa agccttggca gtctgggtgac agtataccac gacgggctgg aatatcttcc tcatcgaca 3180
tttggtatta gtggtaccaa tgcacatctt gtattggagg gtattattcc tttgtcagc 3240
ggaacaatag agtcgtttgc tgcgaatcat gcaagtacag ttattattcc tttgtcagc 3300
aaaagtcata atagtttata cacatatgct caaacgctat tgatattttt aaaacgtagt 3360
caggttactg acgctaataa aatcacaata gatcacatgg aatgtcgctt gttggattta 3360

FIG. 22K (cont'd)

gcctatactt tgcaagtggg tcgagaggca atggacaaac ggataagttt tattgtcaac 3420
 acaaagcaag cactcgtgga aaagctaaat gcttttctag agaaggaaaa gactataaca 3480
 gactgttacc actatttatt tgatagtac aaaccgtcta cagaaatttt ccgtttagac 3540
 gaagatgaca agtattaat aaacagctgg ataagtcaaa gtcaatatca caaatagcc 3600
 gaagcctgga gccaaaggact cgatatcgac tggacgctac tctataccca ctcatcaacc 3660
 cctcgtcgca ttagcctgcc cacgtatccc ttggccagag accgtactg gctaccagaa 3720
 aaaccacgct ataacgcggc taatcatccg gtatccaacc atcaaaacac cactcagaat 3780
 cactcacgct ttgccattga tacggatcac gatgtcgtt gtagatcat gcaaaagaca 3840
 catcaacagg aactggaaca atggtatta aaactgttgt ttgtgcaatt gcaacatatg 3900
 ggattatttc aacatcgtgt ctttgagaca gcgaccgctc tacgtcaaaag tgcaggcatc 3960
 gttgataaat atgatcgctg gtggcatgag tgtttaagcg ttttacagga tgcgggttat 4020
 cttgaatgga aagacgatag cgtagccgcc gcacaggcat tggagtctga atcgcaagag 4080
 gcatggtgga gccgatggaa cacggagtat aagcattacc agaattgatcc ggaaaaaaag 4140
 acgttagcga tattgatata cgtatgctta caggcattac caggggtgtt aagtggtag 4200
 caattaataa cggatattat ttcccccaat ggttcgatgg agaaaaatgga aggcatttat 4260
 aaaaataata ggattgcaga ttattgtaat cagtgtgttg gagacctgct cgtccagttt 4320
 attgaagcac gtctgtcaag agatgccaat gcgaggatac ggattatcga aattggggcc 4380
 ggtacggggg gcaccaccgc gatagtctg ccaatgttac aagcctatca ggatcatatc 4440
 gatacgtatt gttatacggg tgtttccaaa gcctttttga tgcattggaca ggaacactac 4500
 ggcgaacaat acccctatct gagttattgc ctctgtaata ttgaacagga cttagtggct 4560
 caaggaatca gcgttgggtga ttatgatatt gcgatcgag ccaatgtatt acatgccacg 4620
 cggaatatat acgaaacggt cagccatgtg aggcaggcat tggcggccaa cggtttattg 4680
 attttaaatg agtttagcca aaaaagcgtt ttttcgagtg tgatatattgg ttgatcgat 4740
 ggttgggcct tatctgaaga tacgggattg cgtattcctg gaagcccagg gttataacct 4800
 aagcagtggc aagcggctact ggaggcgtcg ggttttgggt acgtggaatt tccgctccat 4860
 gacgctcgtg agttgggtca acaaatcatc ctggcaacca acgcccagc gaacgttgct 4920
 agcgtatctg cgacatcggg gattgatcat gcccccaaga gattgccatc cgccgaggtc 4980
 agcatggatg agagagttag ccatgatgcc atgatgaagg catcgggtcaa acagtgtgtg 5040

FIG. 22K (cont'd)

gtagagcaat tatccagtc tttaaaactg gatatgaatg agattcacc c tgacgaatcc 5100
 ttgcccatt atggtgttga ttccattacc ggtgctagt ttattcaaca gcttaatgac 5160
 acgctgacac tgactttaaa gacggtgtgt ttgtttgac acagctcgg aaaccgactg 5220
 acggcctatc tgttatctga ctatggtgat gatacgcg agtggttagc aacggcacca 5280
 gcgttggtg atcatccaca gagtgtcgtc agtcaggtgt tgcctgaaag gtcgccagca 5340
 agcacacaag ccaagccctt gccttcagtc ccccttcgt tatcgatgga gtcacccgtt 5400
 caacaggagt cgatagcgat tattggtatg agcggacggt ttgcggcgtc agaaaacctg 5460
 gaagcgtttt ggcaacagtt ggcacagggt gtggaattgg tcgaacccgc gtcacgttgg 5520
 ggccacaag cggagactta ctacggcagt ttctcaagg atatggatca attgatacct 5580
 ctcttttta atctctccgg tgtggaagcg agttatatgg accgcaaca acgttgtttt 5640
 ctggaggaat cctggaatgc actggagaat gcgggttatg tgggtgatgg catagaaggc 5700
 aagcgttgtg gtatttatgc cgttgcggtg tccggtgact acgcacaaact gttggggcgac 5760
 caacccccc cccaggcttt ttggggcaat gccagttcta ttattcccg cggattgcc 5820
 tattatttaa atcttcagg ccctgctacc gcggtggata ctgcctgctc aagtctctg 5880
 gtggcggtgc attgggcctg ccaggcccta cacctggatg aaatggagat ggccttgga 5940
 ggaggtgtgt ctctttatcc aaccccatc attgtatgag tctttgctg gtgcagatat 6000

FIG. 22K (cont'd)

ancaatttat nacatccncg ggaaaaanacg aacgggtcacc atntaggcag gcattgcgcc 60 SEQID NO:30
 caacgggttat ttttttaaat gagttaacca aaaaagngtt tttgnagtgt aaattggttt 120
 gncganggtt ggccttattt aananaggga ttngntattc ttgaaaccca gggttatttc 180
 ctaacagtc aancggtact gaggcgtcgg ntttggttac gtgaatttcc gctccatgac 240
 gctcgtgagt tgggtcaaca aatcatcctg gcaaccaacg cccatgcgaa cgttgtagcg 300
 atcttgcgac atcgggtgatt gatcatgccc ccaagagatt gccatccgcc gaggtcagca 360
 tggataaaga gtagccatga tgccatgatg aaggcatcgg tcaaacagtt gttggtagag 420
 caattatccc agtctttaaa actgggatag aatgagattc accctgacga atcctttgcc 480
 gattatggtg ttgattccat taccggtgct agttttattc aacagcttaa tgacacgctg 540
 aactgaytt kraagackkt gtgtttgctt gatcacagct cggtaaacgg actgacggcc 600
 tatctgttat ctgactatgg tgatgatatc gcgcagtggg tagcaacggc accagcgttg 660
 gttgatcatc cacagagtgt cgtcagtcag gtgttgccctg aaaggtcgcc agcaagcaca 720
 caagccaagc ccttgccctc agtccccctt tcgttatcga tggagtcacc cgttcaacag 780
 gagtcgatag cgattattgg tatgagcggg cggtttgcgg cgtcagaaaa cctggaagcg 840
 ttttggcaac agttggcaca ggggtgtggat ttgggtcgaa cgcggtcacg ttgggggcca 900
 caagcggaga ctactacgg cagktyctc aaggatatgg atcaatttga tcctctcttt 960
 tttaatctct ccggtgtgga agcgagttat atggaccgcc acaaacgttg ttttctggag 1020
 gaatcctgga atgcactgga gaatgcgggt tatgtgggtg atggcataga aggcaagcgt 1080
 tgttggtatt atgccggttg cgtgtccggt gactacgcac aactgttggg cgaccaacc 1140
 ccgccccagg ctttttgggg caatgccagt tctattattc ccgcccggat tgcctattat 1200
 ttaaatcttc agggccctgc taccgcggtg gatactgcct gctcaagtcc tctggtggcg 1260
 gtgcatttgg cctgccaggc cctacacctg gatgaaatgg agatggcctt ggcaggaggt 1320
 gtgtctcttt atccaacccc natcattgta tgagtctttg cgtggtgcag atatgctctc 1380
 ttcgaggggg cgttgccaca ngctttgatg cctgtgccsa cggtatcgtc attkgtgaat 1440
 ggggtgggggk ggtgngngc taaaacgctt gtccggcgga ttggccgga tggcnaatca 1500
 tattcacgga gtgattgctg gcagtgggtat caantcaaaa cggctcgtag aamtgggaat 1560
 acgggcaccc agtgcmaaaa tscaaaagaa ccttggwaac gttgggttnt atgacgctt 1620
 tgdtyyaac cttkagcaha tkagcatgkt cgaaggcccvd tggacagggc acgrgdytta 1680

FIG. 22L

ggtgkacccc arttgaayrt daacyttam acccgvggt ttagacactw adacgsaata 1740
 aagaahaatd htgvghatc gsgtcggcnc aaaaccaata tgggamacyg gsaccatggt 1800
 wggctgggtd tggggggcctt gtlkgatttt kkaaaagntgg tgttgcgat gcaacaccgg 1860
 caaaataacct ccatacgctac attttactca gggcaatccg aatattgact ttgatacgag 1920
 tcctttttat gtgaacacccg agcttcgtga ttggtcgggtg ggtgaaggag agaccctgtg 1980
 tgcgacgggtg agcgcctttg gatattagtg taccaatgcc catgcagtga tagaagaagc 2040
 gccgccagtc gtgcgccaac atgaagagca gccgggttat ttaagtgggtc ttatcggcgc 2100
 atagtatga tcaattacgg cagcaagggt gagaacttta tgcgggttat tgtgagcatc 2160
 accctgagtt ggtgtgggc aartcytgag rttatacctt attgnttggg ntcgtcaaca 2220
 ttgntcga tcgtctggct ggtgntggcg tngtgatctt gaggatttgc ggcggtcact 2280
 ggatcagtg nttgggtcag ggtaaaggct cccgagtgtg tgnngtctng canttggctg 2340
 aggtgaacc acngtctanc aagtttctct acagcacgtt ggtaatgaat gtataagagc 2400
 antgcagtga gtccgtgtct gcgaatcact atgtggacgc gttatcgacg gtgggggawt 2460
 tataatgtca gggttatcca ttggagtagt gtgtgttgtt tgscckakggc watrrwcktw 2520
 tsskttkcc gamctakssg tttswarkc agcgttgttg ggtaccacaa acaataagcc 2580
 actccacagt ggtgctata tcacagcatg cttttttaca tcctttgtta catcgaaata 2640
 cttcggactt ttcatgtcag cgttttagct ccacatttaa tgggagtgaa ttttttcta 2700
 ctgaccacct tattctaggc aaaaagatat tgcccggagc cgmtymtttc gaaatggtcc 2760
 gagaggccat caaacaagct tgtggatttt tggataatc tgaagtgtt attcagctca 2820
 atgatatgt atggacaaaa gtgattgacg ttgatgatga tatcaaaagaa gtacatatg 2880
 atcttttttg tagaaaatgg cagtgaatca tgcttaacgc atgagtttga taggcaaac 2940
 atatcgctta actatgaagt ttatacgcaa aatagtggag gaaatggcag gcagaataaa 3000
 aaaattattc ataatacacg catggtcacc ttgagtttct ttgaatacaa ccggaggtg 3060
 tagatcttga tgaactacsc mgccmctata aatcaascaaa gtcttanatg ctgaacaaat 3120
 gttatttggc gtttggaaatc aatargtgtt cakwvtgggtg acaggcmccg atgtatarat 3180
 acsgtwtatw tcggtgagca tcaagtatta rcmaaacctyt ytwtgccaga aattgcagga 3240
 gawttggata artsccttgt tttagcacc caatgatatt atctgtgtt acaggccaca 3300
 ttgggtatta cttctgatat caatgatatt atgttagccg atcgccaagc cgattatatc 3360

FIG. 22L (cont'd)

ttgaccccc agtcgacgct tccctttgct ctkgwmaaa tkkaawtway ysgaaaaygt 3420
 wcagattcta tgtgggtttg gattckaaat tctttatcga cagaccasaa gtctccacgc 3480
 tcagcccggt aatgatatac aacatctcga cattgatcta ttggacgctc aaggaaaagt 3540
 atgtgtgcga atgcgagggt tcttgctctg ggttttgccc aaacaatggt taattcacta 3600
 scagaagaac cgtttacagc ttggaataac cagcaagcac cnttactttt tccaatccca 3660
 ggtatggcgt tncgccagac tcttatccaa gtggccaatt aacctacct taawtgatgc 3720
 ccggtccatc ctgggggtgg ttgtacgnat ttgaaatatg gacttaattgt agaaaataga 3780
 aggatgtaga ggtttattga ccttacactc ccaaaccact tggatttaca ggatcgctac 3840
 ttgtgatatt tgcactgcag gtatttgaaa ttgtaaaang acgtaattgat agataaatcc 3900
 gtacaaccag tactgattca gttgttagtt cctaattgat gagaacaagg ggtattcacc 3960
 agtttattgg cattactaaa ggtggctcgc tcagaaaacc ccaaagtgat tacacaatta 4020
 attcaagtac aatagtcctg caaacctcgc aaaatttact acggattatc actgaaaata 4080
 gtcatgatat aacacatgca gaaattcgtt atcacttggn atcaacgtga atgtttgktt 4140
 tggkaascag taccacaatc ccggtggaat tagcgtcaca gtttgtcaaa gcgwtgcag 4200
 ttatytctwt mcgggaggga ttaatcttkg taggkcskct accactcmat grtgaaaaa 4260
 tgagtcccac aaaatcggta aactagaaat ggratccgtt gggggaccat tattaawtmc 4320
 aatcttawtt aactagaaat aactagaaat ggratccgtt gggggaccat tattaawtmc 4380
 gatgtaagcc aacanggatc aagttaaagc wttgwttaaa raaattkttc ascawtmcgg 4440
 tcaattgaaw ggkgttttsy attgtgcagg tattgtcaac gacaatttta ttctcaaaa 4500
 gtcctcgaca gaatacaaa aggtattggt gtntaaagta tcnggtnctg tcaatttaga 4560
 ccaggcanca canagnatag agatggattt tcttatnnta ntaaaaacgt tatctgcagt 4620
 attcggannn acagnacagg gtnttagata atngtccaaa tactttttcc aggtgttggg 4680
 taaangggat tggaanccaa 4700

FIG. 22L (cont'd)

gcncctnccg cggtagggc cgtctagaa ctatgggac cccgggctg cagtattcgg 60 SEQ ID NO:31
aatgcagggt caatcagatt attcaacggc aaataaatatt atggatgagt ttgcacgcta 120
tcgtaaatgct ctggtcaatc gcaagagcg ctatggttta acactatcga ttaattggcc 180
gtactggaga gaaggaggta tgagtattga ggaataattt gaaatataaa tgcaagagaa 240
taccggtatg tccgccctgg agacatcaca aggtattgaa gtattacaaa gagcttggca 300
gttcaggtac acgcaattgt tggtaattgt cggagagatg aagcgaatgg agagcttttt 360
gcacaagcag ggtttcgagc agattcctgt ggtatccgcc gatactgtca gcgagaataa 420
aacctcgact attgagaatc tttagccga ttagatata ttaccattca ttgaggttca 480
ggcatacaat atggaacaaa aaaccttga ttacttaaaa aatgtatttg ccaccacaac 540
acaaatcccc gagaaaaata tttagttca tgaacattg gataaatacg gagttgattc 600
attgttggtg atgaaaaatga ccaatcaatt ggaataagta ttgggaaat tatctaaaac 660
cctatttttt gaatatcaaa ccattcgcga actgggctgatt ttttcttga aatttcatga 720
tgaagaagta agggagtttt tttagataga tagcaaaacta tctatgttaa ataatacagg 780
agagattgaa gttcaaaaaa aggggatga accatcggtt ggagacagat ataagtcagc 840
tggatgccgt gcctatctcg gtttatatcg cctgtgtcag cagtgaatca tcaacccaaa 900
aatgttaac aatgggtccm atantcatca gccagtaatg ggatattggc gawtattggg 960
tctgagk999 tcgttattcc mcaagcctga gaaatatngg agggataact ggggaagaaa 1020
tttgtgtcaa nggcaaggga ctggtattan cnggaaantt ccaangggag ccgttgggga 1080
ttggsaagac tattwyacms mtnnngatcc statcagcc mggtgggaca tcgcagtaaa 1140
tnggggk99t tttattcggg atgttgataa gttcgatccg ttatttttta atatttccc 1200
tagkgrg99g gagctyrcts atcctcagga aykwttattt yctagrctcc gcgtk99ctg 1260
cattggaaga ccctggawat tgccgggnat tatttgcaaa tgtgtcacc aaggactaaa 1320
tcttcattct cgtcggraga tgttggtgtt tatgtggrag tragtcttcc agaataatcag 1380
ttgtttgctt ttgaacagaa wtacgtgtt caccocatat cctcnggttg ggagttatgc 1440
cagtattgct amccsggtgt cttatgtttt aratctacac nggcccasc atgacagtgg 1500
atmcgatgtg ktctarttctg ttaacgacgc twacctagc atgkcgaggga tttaaaactg 1560
ggkcgaaact gaccygggta ttgkcgk99 agttaawatt accattcacc cmataaata 1620
tyaggcsctg agtcacgcyc aaattattty tactagtgggt sggtgccaaa rttttggtga 1680

acagggacag ggttatatcc ctggtgaagg agtgggtgcc ataatactga agcgttggt 1740
 cgtgaccgag cgtgacggtg atcatattta tgggtgttgtt aaaggcagtg ccgttaacca 1800
 tgggtgtaaa accaacggct ataacgttcc taatccgaat gcacaacagc aagtggtag 1860
 tcgtgacta cgagaagccg cagtaaaccc ccatcatgtg acttatattg aggcacatgg 1920
 aacaggaacc caattgggtg acccgataga aattactgkt ctrammaaag cgttcaatag 1980
 ttgaccaat gagcttggtt taagcgctgt gscaaaacma tykggtttga tcggstcark 2040
 gaagtcaaaa tataggcat ttagggcat tgtgagycas caagccggtg ttgcagctat tagcaaatga 2100
 ttgttacaaa tgcaaacacgg gtcaaatagt cccttcttta cattcaaaag cattgaatcc 2160
 caatattgat tttactgtga ctccctttgt agtaaaccaa gggttattgg actggaaaacg 2220
 acttgaagtt gaaggaaaga gggtrccgag aatkgctkky mwwwckkytt ttggggccgg 2280
 tggctcaaat gcccatgtag tgattgagga gtacgttgcc agcaatgaaa agcaagagga 2340
 ttttcaagga aaagtaatta tccctttatc ggcwatagac tskgatcar ctacaaraa 2400
 warkggatcg tttgcttaag ttatcraaa aaaatgaagc aaaraggtag ggaawtksgc 2460
 ttaattgwty ttgccgwawa cattgcaact tgggcgcgag gtcaatgara ggaacgtctg 2520
 gncmttngan ttgtaggaat cnaataccaa atgcttaang gaaagatttt agcaaaaggnt 2580
 taaatactc agaaaatnga tgcacanatt tttcggatagc ttatcaaaaag rcatttttctc 2640
 ggggttcgta ctagacctgg gtgcgttgra tttcgctatt ttttctgaag atgaagaata 2700
 tggccaacac gcttgatatt ttggattcaa aaaggtaaat actttaagnc tggcggagct 2760
 ttgggtaaaa ggtgtgacta ttgattggaa taaatgggtat aacgcattat taaccagaa 2820
 taaatatattg aaaccntcgt cgtattagtt tgccnaacng tatcctttttt ccagggatcg 2880
 ttattggatt nccnaagtgc ttttccacaa ncaaacattt tctacagtaa ttgaggcaga 2940
 cgccaaccma aacattgaaat gagctactgt gttttgaaga aaaatggcag gtgcaatcgg 3000
 aactacatga ctctgttgca gatcaatcta atgttatcaa tacattaat tgttttttaa 3060
 ctgagaaaga gcatcaaaaa gcattacaac aatcaatatc attccatagc ccgaaaaacac 3120
 gattgatattt tatcagccag gctcaggctt atgagcagta ttcatcagat cactatgcgg 3180
 ttaatccaga aataggaaaag acgtaccaac aggccttttca acacattgtg aaaagtattc 3240
 ataaaagtga tgtcacggac ataattgtatt tatgggctct agaggatgaa cgctggatta 3300
 cgtctcctct acctattgta tatcttttaa aaagtattga ggtttcttta ttaaaaccar 3360

FIG. 22M (cont'd)

aaaaattact atttggttga gaatttaaga caagcttakc rrcgaytgy acyykraakc 3420
 cwrkgkgggw ttygmamrwy ckkwaksgtt dgtgcaacsg ratwtkragg ttgcggtggtt 3480
 attaraggcm rtggaaggta ctyaatccca tmcagtgaca aagcaaatgg atctttggat 3540
 agaaaaattg tggtcgtcct taaaagccca aaaaagttcat agtagcttat accaaaaatgg 3600
 tcgtagatat ttttctgaaa accccamcgg ctgcaanctt gtcatgaacc aaagtattca 3660
 aatgcttaca gggtracttta ttgataacag stgsygtgr aggactgggt tttgtcttyg 3720
 cagatttattt ttccaagaca tataaaatta atctgatatt ggttgggccc tctgatcttg 3780
 ataaagagaa agswwtcgsr ratwcrgrmt ykgkwmaat caggtagtcg agtggcttat 3840
 gttcagacgg atatctgcga tgaagaagaat ctccaattgg aattggatat tgcccaaaaa 3900
 tattgtggcc ctattcaggg tgctattcat gccgaggga tcatgatca gaagacaatt 3960
 ttgaaaaaaa gtcctgaaaa ctttcaagca gtattagccc ntaaaattca ggttacattg 4020
 attctggata acgtattgtc agcgcaatca ctggatttta tatgttactt ttcttcaagc 4080
 tcggctctat taggtgatgc aggtcatgt gattatgcaa tggctaactg atttttgatg 4140
 gcccatgcac agtatagaaa tacctyggta tctgaargaa aamscaaggg raagacmctg 4200
 kttwttcatt gggccgcctg gaatgtgaaa ggaatgggat tgaatggact ggaatgagaa 4260
 cgtgaaamca ragttctwty ttaagtccaa gcgggcaasg tctattggac ataaaggaa 4320
 gtgtgaggt tattgaacac attrctggct caggattatt ytcagtgtcy tawattggst 4380
 gkgaggaaaa accngtatcw aacaattttt tgggtctcac acaaatgtt ttctnacctc 4440
 acaagtgagt caagggcagg magtrawgaa cwwasrrswk kmykrrass ksyamyaaac 4500
 gagctgagat agaagacttt aagtgttgaa gaatgtatta ttttggactt aaaaactctg 4560
 attacagagc aacttaaaat accatcagc tcatctggat gtagagagta atttagcaga 4620
 ttttggtttt gattcgggtca gtttagcaaa cttttcccgt gstttaagta ttcmtatca 4680
 ttycaawawt acgcrstsk tatttttcgg atatcctacc atagagcgy taarccgta 4740
 ttttttaaaa gaacmcmctg cgsttatgga ggcgttttat cagcagaaaa aaacatytw 4800
 tagtaacaat acvctgtccg ntatagtccy tcatgtcaaa gaaaagccgw caactgatct 4860
 aatatcatcc arcngcctct ncctttttatt gcagatccat tgccccctca ggstattgag 4920
 agtattgatg agcctattgc cattattggt atgagtgggtc gttttccaga agcgcgtacg 4980
 gnttaagca atgtgggaga ttttatccga aggtaaaaat sytgtgcagg agattcctat 5040

agagcgcttt anattggcat gaattattg aacaccatc ggatgatgtt ygaanaandb 5100
 taatagtaaa tggagygctt gcattcctgg tattaaagaa ttcgatccac aatttttcga 5160
 aatttctcca agagaggcaa aaarctgga ccctcttcaa cggcwcttat cacaggaatc 5220
 mtsgaatgca ttggwaaats ctgcttatgk wwwmywacrc wkwgmtmwtw aracratggg 5280
 atayktkkat tggtrttgaw smaggktwtt atmmrrrymw gmtcaatkmr gwygacsgca 5340
 cacwttwawc catmakrmta ttttrgcata ccmgtytgsc agtwtywt arakyttaat 5400
 ggscmwrssa tggcwrtwaa wrccgcwtgy tcctccgsyw tggyygcrmt tcaccamgt 5460
 kscsysagtt tackwcarca agcaatkyga wrcgsckawk gwscggcgag cwwytrrmw 5520
 mwyacrssk sawswtkaws tggscwtgay ssawgsgrgy mtgakmysac mwgawgsyat 5580
 amygawakac ckarnrtcam csygccaaks gcryagtgm ytgakagsmw gytgwtgcar 5640
 tcgtaytgma acrwmtcttk sgggktttcc aaaagggggtt mmaaat 5686

FIG. 22M (cont'd)

gngatgagat tgatgagaat acttaatttg gtcgaanagg ccattacntc tatgattctt 60 SEQID NO:32
 ggtgaattta taagccaatt aaccngtgat ttagtttggg atatgaaaga acccgtttta 120
 ttgactatc ngaatatata tactttatcg aatatgatcg agaagaact cgaagctgtt 180
 gaggtatagt tatgttagaa gttattaata gatactgcca tggatacgtg ttcgtgccag 240
 tggatttggc cntagaagaa aaagggtttt ttgacctttt tacaaggaat agatacctta 300
 catttgaata aataaaaaa gaattaaatg ctaatatgtg ccattctcaa gtagccttac 360
 gcatgttgca gtctgtttca tggatatcat gtgatgataa agggatatga ctaacagatg 420
 cagcggacga aagaaataaa atatctagtg attttataga gctttttaat ttctctatga 480
 gtcgctattt agaaaatatg gaaaggcatg gattaaaaaa atggatagat caatccggag 540
 ataactgggg tatttcaaac cctgtattaa cggatttttt ggatggtgtt ttaattattc 600
 ccttattact agaactgaag gaaaatgggt attttgatgc gttaaaaaat gkwaatagtc 660
 taaataaaaa attattttta gngtgatgc gaacaatcgg ntgcgaawg aaattattac 720
 actattttta acaaaagaac tggctccaag aagaatraag agacgtttta cttcacaaa 780
 ntctggtcaa ttnaycact caacgaattt ttattaccgc aatccattgc ttcttataag 840
 cccatgttta tctcgggata acggaattaa tgtttggtaa tgctaggagt atttttaaa 900
 agggattgca tggagaggag agccatgttg accgaacctt aaatggtatt ggtagtggtt 960
 ttcaacatca aaagtacttc gctgatctcg aagcgttagt cattcagtta tttaatgata 1020
 mttktacga tsraywscg aaatrkrts crratatggg ttgtggtgat gggactctac 1080
 taaaaaatat ttacaatatt atcaaggaaa aatctgcacg aggaacgtg ttgaatcact 1140
 atcccgtggt acttattggt attgattata atgaagccgc ttgacaggaa actaacaata 1200
 cactggcagg tgttgatata agacactatg tttaaaagg cgatattggt gatcctgaag 1260
 gaatgataag tgatctatat gatttaggta ttaagatcc tgagaatata ttgcatgtgc 1320
 gttcatttct ggaatcatgat cgctctata ttgcaccac agaggtgatg aatattgaag 1380
 cacgttcaaa gatatttgat cagggcgtgt atgttgattc agaaggtcaa gcaatatcgc 1440
 ctgtggttat gatacaaaagt ctggtggaac attttaacg ctggtcttgt gtaaaagacga 1500
 aacatggctt gcttatatta gaagtacatt ctctaaccc tgaggtgtgc aaccaatatt 1560
 tggatgaaag tgaaggtttg cattttgatg cctatcatgg tttttcctct caatatattg 1620
 tatcggctga ggattttcta atatgtgctg cagaagctgg ttatttttct aaacctgatg 1680

FIG. 22N

ttctcaaaa ttatccaagg aacttacctt ttactogaat taccctaaat tttttgaaa 1740
 aaaagcctta tcaaatcgt caccgaatg aaaatgattt gtctgcattg atggatttag 1800
 aaaaaatttg tgcacctaat aatcaatgtt tatgcattga tgaccttcgc caacgcatag 1860
 atgaataccc aaaagggtcaa tgtgttttag aattaaacaa taccattgtt gcagtgtattt 1920
 attcacaaaa gtgtattaat agagtgttag gcaactgctgc aggtgttttg carswswwtg 1980
 scmdhggaat rtgbdwdcac datttvtaba thactbgttt atcaatdtaw trcccaaat 2040
 aaaaaagaa tatgccatmc aattattaca gtttatcttc tatytatcat ggtgttcawa 2100
 atgatgttga agatgttatc ggtattgatg aatggtatca gtgcttaaat gagaaaacga 2160
 tacaagcagg cagttttatg gaaagtgatg cagttgatgt tttatatcc aagagtagaa 2220
 aaacatatgt ctaagtatcc caatagatat tggagtaaat gctctggatg cagagcagga 2280
 aatggggttg ttgggtgcta agtggttact atctattttt caaagcccaag gagtgtatgaa 2340
 aaaatcaggt gagtattatc aaaaagatca attngaggtt gatgttaaat attattccaa 2400
 aatattatcg attatttgag tgcttgctac tcatatttng aaaaaagaaa gcttatttca 2460
 attcaaaaaa atacnggtgc aaacacttcc caatattgat gaatttgctc ttaacgatcc 2520
 attggnttga gtttgcttcg tnttaagcgt acgttttccct ctcaatatgc tagccttatg 2580
 cgtttctac gattaatggc atcgtgcctt tctcgtatt tggaaaatatt aacaggcaaa 2640
 atacaggcgc atgacattat ttttccagaa nggagggatg aatttatttg aaggattttt 2700
 taaaggctat caactttcag ggttaatatg aantaaaaca attcgtattt tagaaaataag 2760
 ggctanacgc tctatccggt ggttaatatg tgatttngaa tagnagcttc mccgctnctc 2820
 gagcaggtag ctggtggtgc caacagagtt tgtattngaa tagnagcttc mccgctnctc 2880
 gaatgggtat aagagtttta cntatactgg atatctnctg ccntcgttcc ttcgttatgg 2940
 gagaaaagtn agatttttycc gataaatatn ccctggntng caataataag tgtagatat 3000
 ntgaaagnca atttagantg cacaagggtt ttaccctgat agctttgata ttngtgtatg 3060
 catctaattg tntccacga tacgaaaata tacaagtat accctttccc aaagtgtatc 3120
 acatgctaac gcaaaatggc ntgtttaatg ttgaatgaan ttactcngg atgaanggat 3180
 ttgttactgt ttaccggttg ttgttagat ggcctttggt tatatgaaga ccctaccaat 3240
 cgattggata atgtctgctt gttaaatgtt gatcagtggt gatctatat attttaaata 3300
 ggctttnaaa aatgttaaaag actttgtttt accttttgaa aaacttaata ttgagcaaaag 3360

FIG. 22N (cont'd)

tcaaagtatt attgtctctg agtgattaa tgaagacctg tctagtaatg nttgaaaatg 3420
 tggtagaaaa taatcanttg tttnagaaat acaaaatcac tcntgatncc gattactngt 3480
 ggagnaataa aattagntta caattnaaaa gacaantcmc wtcggttanca caatagtatt 3540
 ggaagaaaaat atttttataa aatttttagng gggataaaaa gaaaattatn ggatttttct 3600
 cntaaacgc ccctttgatt ggagtttatg ggttggttc atattcgaac ctacnttga 3660
 anttaaagat cattactcgg kragcmtyt tcyataaaac trgaasmtac tttkktmtky 3720
 mawkatkraa yrmkscckm rsctmtytgw kwcmccsay atsattcmag wtrascytsr 3780
 wattrtcgnt arakwcccta ttacggaaga gataatgact ggaggtacgt caagggtaar 3840
 aacagggcaa tcgaatsaka atgaacctat tgcgattatt ggtatgtcyt gtttatttcc 3900
 aggtgaggtt acgacagttg atgagttctg ggaattatta atacaagaaa gacatgcct 3960
 tcaaccctta cctaaggac gatcagggtg gatttctgga tggtattgat accttgatg ccsacttct 4080
 acttggcatt gatcagggtg gatttctgga tggtattgat accttgatg ccsacttct 4080
 tcgtatatcg agaaaagaag cggagttwat ggacctcas caaagaaaaac tacctggaat 4140
 taarttgga ggtcatasag catgccggat ataaacctat cgggtttttc tggtagaa 4200
 natygyytc tatgtgggtt gctttgtcac cggtaattta tatgggagt atttaactaa 4260
 aagtgaacaa angccctaaa aaccaaccgg naaggcctat ttkcatgacc argtartana 4320
 ttgttggtcg tytttmccc aataanaatt ttctatttt ntattaatt tttaargtg 4380
 cccmscstcc tctwtctgat wccngcctg ttcaaryagt tttaggttg ctwttgacc 4440
 caancarttt tatgcgnatt caattcggg nangngtga atcaggcnc tggtaggtg 4500
 gggaycaatt waatrctccc tccsmrtgaw accggtttct tnatayywa gcaggtntgt 4560
 tntcaaaaatc ngggaatga aaccttnga tccaccgcc gttggttttn tncctgggna 4620
 aagggggcgc tnttcttttt ttnaatcnt ttctcanccc nattttaaaa ngattgttt 4680
 ttnggggttt taaagggggg agatnaaaat ngggggcaan cattnnttac ggcctaacc 4740
 tnng

FIG. 22N (cont'd)

gangattcct ncnctnccc attgaaaaga ggatgggattn gancatatgg gtgtgcctgc 60 SEQID NO:33
aagaagataa gtcaatataa tgtaactcag aaaaatcaat tcccaaatg aataccccc 120
aatcwataca aaaaawattg awagattttt kggtkgacat tactaacttt ttsgaggcna 180
agacatcmat ccmrgcmgga tgcctggtga ctatggtgkt gattccatta ttaggtatga 240
gatttyttaa tcgaattaac cyccaccttt aawatagaag ctgatgcttt attactaaca 300
gaaggaacga ttmaccagta tatctcataa arkwcmttct tttattgttg ataaaaaaa 360
ttacccaatg ttaccaaatt ttggattaga aatgattct aataaagaaa ataaaggctg 420
ggtaaaagcct tcttttattg aatttattaa atttgaaatc aatcctgaat atatagaaa 480
cagtacaaaa aataaagatt acgcgattct tgaatatcta ataaataatg gagttggagt 540
ttggagagaa aataatcatc tatgttttga gtttttttat gaaactcata caaatgaaac 600
aattaaaaaa atagtgtttt caccgaaat actttttaac tctctagata aaggtaaacg 660
atactttcca agtagctgcc agcaaaaaaa cagtctatat caaacggaag ttgagaagt 720
tccatataat cttattcaag gatttagagt ggaatgcca gtcaatatg aaatttttaa 780
taaagcattt aatcatttgg ttaacacata ttcaattttc agaacaaaag caatgttgat 840
caataagcaa tggatttcagg taatacatga tggtttatca gtaagatgag aaganaatta 900
yatacgaagg attatctgca ggaataaagat ttacgcaac aactaatnag tattcaaaa 960
agagcaagggt aaaaaattat ttgatattcg taatctgcct ttattaaaaa tttattttat 1020
ccataatggt aaagacttag cagctatttt tgttcattgcg catcattttt gtgccgagg 1080
atttacattt ttttcttttc agaaagaatt tcatgatatt trtgaaaagta ttatraacgg 1140
antggrrrwat ccggaacgk gttsawaaa gtgatggctg aatatggcca ctttgcattg 1200
tgtgaatata atcccaaaaa caaggagctg acaaaaaact ggcttgataa aattcgagat 1260
aaaaattttt ctttaaaatt taaagataag aaagactatg tcggtcaact gtcaagtga 1320
gaaaaaatta ttgagctaga agtttctgta aatatgctgg aaaaattaa attattta 1380
gatgcgaata ataccacact gacgcaattg ctatgttgtg ctgttgcaat ttactgtat 1440
cgcctctcga ggctaccagt acccttgcaa atggtcaaca gccgtagaga taaaatagaa 1500
tttgaaataa tgatgggtga ttttgcatca actctgccct atggatttta ggaaccttc 1560
caaaagcatt ttctctatc cnggatggtg ccttttttaa gttattggaa aaanggaaa 1620
aggcnttnaa ttntcccccc naggattttt taaanggggt ttggatnnt tntcngggaa 1680

FIG. 220

ccctcaanaa aaaaaaatt tntttccaaa aaaaaaagg gccccttaaa ntccccatta 1740
 agggaaattt ttaaattttt taatttcccg gnaaaaatta tttntttaaa ttcgggaatt 1800
 aaggccnaan tggaattaat tggnaaaatt tccantttgg gtttttaaaa aggggaaaaa 1860
 ncccannaat ttgggtttcc taaaaanaa aaaaaagg gngggccccc cgtgggttc 1920
 nttnttgggg gnaaaaattt aaaaatttaa tttt 1954

FIG. 220 (cont'd)

anccgaaaa naccnaaaagg gnnccgggcc cntgtcctnc gagtgcattna taaaaaanc 60 SEQID NO:34
 agtnataagn nggnnacaat antcatgccc cgcccccnc gnaagnaacc tnanntgggtt 120
 naaggcttca agggcatcgg tcaaggaacc ttccggcggg cttttgctgt gcgacaggct 180
 cacgtntaaa aaggaataaa atcatgggtc ataaaattat cacgttgctc gggcgccggcg 240
 acgaatgttc tgtatgcgct gttttccgt ggcgcgttg cgtctggtga tctgccttct 300
 aaatctggca cagccgaatt gcgcgagcct ggttttgctg aaaccagaca cacagcaact 360
 gaataaccaga aagaaaaatca ctttaccttt ctgacatcag aaggccagaa atttgccgtt 420
 gaacacctgg tcaatacgcg ttttggtgag cagcaatatt gcgcttcgat gacgcttggc 480
 gttgagattg atacctctgc tgcacaaaag gcaatcgacg agctgsrctm scrmaktygk 540
 gmcgccgkmw cctwmrarrst twttcscaaw rragkkywt tmaamaagsm cscygskrky 600
 gswwtggwr ctawccacgm arcssmwwty gaaamaccks rkcyggntkw csrawawmwa 660
 cmrsmycasc ctgggwawmm armrwsmtga sywgcckcw aamaakgtwa ccstcrkgkc 720
 cgmtywggkc aawkttwmac cysrwrwrr ymcmaamatt garrcsttgm ycgrraacccsc 780
 gmtgaaaaan ncgctghntg nnaatgtrvg gcgnttgat gtchcaaagc aaatggcasc 840
 agacaangaa agcgatggat gaactnnngg ctcccttatg tccgcccggc caktcatgat 900
 ggaatgttc cccsggtgg tgtatctgg caccagtgc gtcgatagnt antgcnaant 960
 tngantaant tnattnatca tttnngcggg ntcccttncc ggcgatccn gccttgttta 1020
 cggggcgggc acctcgnccg gtttctgcta tttatgaaa ttttccgggt taaggcgttt 1080
 ccgttcttct tcgtcataac ttaatgtttt tatttaaaat accctctgaa aagaaaaggaa 1140
 acgacagggt ctgaaaagcga gctttttggc ctctgtcgtt tcccttctct gtttttctc 1200
 cgtggaatga acaatggaag tcaacaaaaa gcagagctta tcgatgataa gcggtcaaac 1260
 atgagaatc gcggccgcat aatacgactc actataggga tcatatttat ggtgttatta 1320
 aaggagtgcc catcaatcat ggtggcaaaa ccaatggcta tagtgtgcct aatccggata 1380
 agcaacagcg tgtcattagt gaggctttgc agcgggctca aatagctcct catcaagtca 1440
 gttatgtaga agcgcattgt gcgggaagcc gtttaggcga cccaatagaa attacggctc 1500
 tcagcaaaagc atttaacaat gttagtgcgc aatttaagt gaaaagtga gccaatcaat 1560
 cgtgttttat tggctcggta aaatccaata taggaaactg tagaatctga gcagggaant 1620
 gccagtatta gcaaaagtatt gctacaaaatg aaacatgggc aaatagtgcc gtccttgcat 1680
 tcaaaagaac tgaatcccaa tattgatttt tcagcaactc cttttgtggt taaccaagaa 1740

ctgcgcgatt ggcagagacc gctgattgat ggaaaaaacag tgccgagagt tgcgggtgtc 1800
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 agataccgac aaataacacc agggaatcta taaaccatag gtctattatt ccattatcag 1920
 cacgaactgc tgagcagttg cggcaaatg ccagtagatt gctggcattt attgaaaaaga 1980
 acaagcaaga cagcgtggtt acccccttaa tagatatgct ttatacattg caggtaggac 2040
 gcgaagcaat ggatgaacgc ttgggggttta ttgtgagttc aaccgatga attagtcgaa 2100
 gaactacgaa gatatactca aacacacgat gatatggaag agctttatcg aggtcagggt 2160
 aatcgatatg aagacacctt tcttactatg gcggctggat ggaagatctc tcttgaggct 2220
 atcccaccca ttgggatta aaaaacgaaa aactggtctt aagtttaatg ccaattattt 2280
 gggattttaa aggggtcttt gtggatttaa wtkgggrkr agwtatassw tkkyttmcca 2340
 aargrkgwtw ktccycsgr matkarmkka ytacctrtcc yttggrgrgs matattttta 2400
 rgwtkktamm swtyrnmccc tcwtwcctyt tktgrcccc aggnccaaa tttatttng 2460
 tttngnggga atttngtttt aaaaaagaat tcggttaanc ccactnccn ttaaaccttc 2520
 attttggggg gnaatgggtt ttattgnaa ccattccna aaacccaaaa ngggcctttt 2580
 ttttttccat tccnaaaaaa accaaatttt ggcccccttt ttgggggggg gaaaaaaa 2640
 accnaangg gaaaaaatn ttttaaaaa aa 2672

FIG. 22P (cont'd)

nnnanntttc cnattccctt 999cggaaat ttttggcca ggnnccgnat aaccaaagga 60 SEQ ID NO:35
cccttttctn ggcctttaa aaaaacccaa tttncccnt ttaatccccc cgaataaaag 120
aacctttccc aaaaaaaggg naanttgaan tggggggnan cntgggaaat cccaagccaa 180
aaaaaggccc aaymtcgccc waraacrkkc wmwscamatc rgrtgttwtat tggrrssrg wmyawwtraa 240
ttkwtkrrwa mwrawcyagy grrtcaatka tgssrkwtyy tcaaymttgg gactcmcyym 300
aarymytcca wyktkttkss gaaaacmyw attataktr taagsgggcc aaataatcaa tgttggatat 360
tcmmmwttt ataaaaaaa gctcaataa attttnctgc caacaactaa gacagctcta 420
ggttaamccg aaaaagcaata atgagtcctt gtgattattt cccatgaaaa aaacaatggc 480
caataaacat atagatctca tactgaatcg aatattgcca ttataggtat atcagggtgt 540
attttaatag caaaaaatgt taatgaattt tgggaaaaat gataattgata attactttga tacttcttcg 600
tttccggatg tccctataa ccggtcttgg gataattgata ggagcatttt tagaaaaatat cgatcttttt 660
gttaaagaaa caaacacatg cactgaatg gaaagcgatt ganangatgc tggttatgat gcatcaaaat 720
caaacacatg cacaggaata ttttcaatat ttctccggtg gaaagcagagc ttatggatcc aactgaacga 780
gatccgctgt ttttcaatat aggaatcctg gaaagcgatt ganangatgc tggttatgat gcatcaaaat 840
ttttccctc ntaagtggaa aacgntntgg ggggtatttg cctgtgcaaa gggagactac catgccatta 900
ttcacaagca gataaaaact cgtatcatga ccactgactc tatgcctcct gccagggttg 960
cttatttatt gaatttgnnt tagggcctgc agttcacgtt gatannggc ttgttcatcn 1020
gtctttggca gcaattgctt acgcatgtga tagcctcatt ttagaaaatt gtgatgttgc 1080
cattgcagga ggtggaata tcaactcaac tcccagcctt ttgatcagtt caagtcaact 1140
tggtttgttg tcaaaaagatg gccgatgtta tgccttsdat caacgtgcaa acggaacggt 1200
attaggggag gcggtascac cgattatttt aaaaacctta caacaagcga ttgacgatgg 1260
tgatcaggtc tacggattaa ttaagggttg gggaatgaat caaratggaa aaaccaatgg 1320
tmttactgct cctagtgtta agtcacaaat tcakttggaa acggatgttt atcaaaaaat 1380
tatgatwaat cctgaacata ttrackatggt tsmagcccat ggaactggga ctaaaactasg 1440
agatcccatc gaggytcagg cattamcaga agcttttcas aaatatacty aaaaaacakg 1500
gtmttgtgca ctagngttct ttraaaaarwa aatattggac atacnttttt cccgctgctg 1560
graktckcta gatgttaatm aagggttttg ttgtccattt cwcancatty acmargwttc 1620
1680

FIG. 22Q

YYtycrtart twwtaattyw maarstatna mttwttcaww attcctatyg tnaawwaccc 1740
 ywatatttkkw ktaaaaamcag cyscatwttw wyyssskgtm attwwnyycc nctttwttrw 1800
 wmcccmmytt gcgrrcsgtt ttttcgtkk ktgtttcrwc akagaatctm mmsycctttt 1860
 ytygcmmma anmrnnttaa acmmmtwrcc ttttytttrgr kggsgycccc cncncngggg 1920
 gaanccccc antgggtccc cnnttttggg gggggggntt tngnnaangn aaaatttttt 1980
 tttcatgccc nnanaaaagg tccttccgca acctttttta aaaaataanc cntcccccna 2040
 aaanttggg natgtggan tgggaattaa aaaggccctt tttttacccc cccnggttta 2100
 attttaattc cccctttttt tggttccggg cc 2132

FIG. 22Q (cont'd)

nnaccaattt tccgaacccc aagncatttt gaaagggggtt tttggggccc ggggttgaaa 60 SEQID NO:36
 aaaaaaangg ggttttttgg ccccccccc nnagnaanta aaaatgggta aggaacnccg 120
 cccccactt tggaaaacctt tcccnaaaa aaaataaaaa ggcnttttga atttttaac 180
 naaaatnncg ggggntgggc cntttaana accccccnt ttncaaaaaa tgcgarrrgk 240
 gggycctccwr rnaytyyaaw awgramsgk tawymccwa ktgrggggwn ttwtatcawt 300
 aaaggnssgg gktytawkw tttawraarr ggragcttta graawawaaw arwcmgtkgk 360
 ktttaaraga rattkwwaar rraactggrrw traaktwww rwrttatwat anaaatrkkw 420
 aakggwwrta tagaggggaaa aaaattttaa ggataaaatga argaaaaccca tcwccattta 480
 ttttccaaga sgaccaaaaga aatgatagaa gttgttaaat ttatggrrgc gtaaaaagaa 540
 attttcccaa awttttaawt yctttgggtt aaaggattaa acmcttgrtt ggaagcaatt 600
 atatggtaaa gaacmtccag ctcgatttag ttggccawgc tatccttttg ccaaagagcg 660
 gttattgggtt ggatactgat aagtttagtc acggtagttt tytcaaccct agrcaagagg 720
 gaatwaatac agatagtgat aagtttgatg aaaagcttta tgaatccttg ttggacaatc 780
 tttttcccaa aactatgacm cctgatgaag ctattaagtt aatggaagag gaggatcat 840
 gaaaaaatta attaaattga tttatgaaaa agtttttgaa aataaaactat caaaatcaga 900
 agccttgctg ttgattagtg gattgaaggc gagcaatact actatccttc atccccctat 960
 acatgaaaac acgtcaagtt tttttgaaaa aaaatttcagt tcaacttttt ctggtagaga 1020
 atttttcttt cggatagatg ctaaccttaa aaaagtgtga ttatctcctg taacatacct 1080
 tgaatgggtt tatgctgcag caacaaaaggc aatggctggt gagaaaattt cagcgcaatn 1140
 ttaaaaaaat tgagtggcaa tatccagcta ttgttcatag agagtcgata acagttcata 1200
 ttcgtttttt taaagatcca aatacctggt tggatacaag tgaggagaaa tttttatgct 1260
 atcaaattta cacaatttca aataatcaag aaacanangc gatattgttc acaacggggg 1320
 tgtaatatag tatgatcata aaaatagtga attaatgcca cttgatattt tttcactaca 1380
 aaagcatatc agtgaatat ttttagacc tttagaggtt aatgaattt agtgaattt ttgaaaagag 1440
 cgataaaaagt aatgagccct attatcagag tattgaattg ttacatatata attttcagaa 1500
 agaagcgctt ataaaaattat cgtttgatca cgtatcagga tacatataac catcaagagt 1560
 cattgggttt acatccagat atactggagt tggctttaca atcctgtagc ttcttatgcc 1620
 ttgatatggc agatactgga atctgagttt ttcgggggag ttgcagccca gtgagtggta 1680
 gatgctttta tcaaatncat gtctcggctg gtccagggac ctcaaatggt gggktttggg 1740

FIG. 22R

ttaccggcctt aacarsyttc catggaagg taggnnttaw atagscrcaan tatttgccy 1800
tkggtgrtgg aatrawrgtw atkcsk9ggg wccwgstamw wagggttggg ttytcaaac 1860
cawawraamm skgtttyttg rrkwwttttt tssmmmgcc scnaaatng aacccccnn 1920
ngngtaaaanc ccnngaaat tnntntttt ttttncccc gnnccccaan cnnagaaang 1980
aaccttncg nggttttggg caattaaatt taattagggc aaaccccccn ttaatnggaa 2040
ggggggncca nttggnggt tttttngga aaaaggaaagg gnaaatggg gnaaaaaagg 2100
cccccccaa nttnggtttt aaaaggagg aaaaaaaatn aaccgtttta aaaaattnc 2160
cccaaaant 2169

FIG. 22R (cont'd)

gcaccgttgg aacgttatgg catcgattca ttgattgtga ttcagggtgaa tcaggcgctg 60 SEQID NO:37
gcggtatatt ttgatgcgct gcctaaaaca ctgttatttg aatatcaaac gatagacgcg 120
gtcgtggctt acttgggtga gcagcacgcg caggcatgta ggggtggac ggggttaacg 180
gcaacgggtc aagctcaaa agaggggtgc atctcctcta cctcatcagc ggggtgtgaa 240
cctgtgacac cgagacagaa agaggggtcat cctatacaga aagacatcaa gtgccgagaa 300
caccagtgga cagacgagcc tatagccatt attggctga gtggacatta tccgcaagcg 360
aatagtttgg atgcgtattg ggaacttg agacgggttt ttccatgaag atgtgaaga agcgtatgcg 480
cccgatgacc gttgggtcgt agacgggttt atgggaggg gatttgctga ttttgacct 540
caagggaaaa gttacagtaa atggggcgt tttttagagg atccacagga gcgtttgttt 600
ctctttttta acctatcgcc gcgagaggtg atgacgatcg gcgtgctcag cttgcttcgc 660
ttacagagtg cgtgggaagc tgtggaggat gccggttatc gacgggtttt gattttttatg 720
agtttaacaa gcgtgtgggt gtatttgcgg gtattaccaa gacgggtttt aggttttaaa 780
gaatacaatc ggatcsagct sbtytnycg wtnatacttc ctnttackcc aggttttaaa 840
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tnagcancsg dcggtttttk mattttttta wtgggaanac nncaatcggg atcaacntct 960
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catgaagcct gcgagcatct tgnccacctt caacctatat tagatttgtt actttacgga tgctttccaa 1140
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tatcgctggg ctgagcnaaa gttattctgc agatgaagta tgaaaaaata gtggcaagcc 1620
tacatgcaga aagactgaat gccaatataa attttgaaca aactcctttt gttgttcagc 1680
aatcacttaa tgaatgggaa agaccaaac ttcatgttaa tggaaaaatc aaagaatatc 1740

FIG. 22S

ctaggaccgc ggggatctct tcttttggtg cgggaggagc gaatgcacat ataataatc 1800
 aggagtatat tccagaagtc agtcagacac gacaatcaga ggtcaggaat aaaccagctc 1860
 acccgggtgc cattctgcta tctgcgcata ctccgctca gttactgaag atggccgagg 1920
 cacttttact atttattcgt accatagtga ataatatgga ctcatcctat tcggcagggg 1980
 atgagatgac tcaacttgga aatgtagcct atacattaca ggttggacgt gaagctatgc 2040
 aggaacgcct ggggtttgtt gtgaattccc tgagtgatat tgaagtgaat ctacaaaaat 2100
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 aaatctcagc tctatttaat tcggatgaag attgcagga agtgattaaa caatggatgc 2220
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 acttcttgta tcaacatatg cgaaccaaac cttatcggtt acatttacca acgtacccat 2340
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 tgaaaaggaa aaactttaat gtccatgaaa aaaagccatt tcatgttct ttatcaactc 2520
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TEF10" BE54260

aaaaaagtgc aaaagcgtgg gcgcagatcg agaaatttat tccgttgygg aatagactat 5280
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 gcacagacat aaattgcgcg accatatattg ctgtagactt tggctttggc atcggagggtt 6180
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 ckwtgtccm wtatymarra ttgcygggtg ttgtygcttc tgamtaaaag ctcaatat 6360
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 aatgtcttac gattatgatt tgtttgtgat tggcgccggt cgcggtagct gaggatctct 6540
 tcgtattgca gcaggccttg gcgctaaaagt cgcggtagct gaggtgggtg tgcgtgcgag 6600
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 ytgaagagtt traascagcc gcaggttttg gttggacaat agggtcacgc tcttttcatt 6720
 ggccamcatt acgtgacaaat aaracaaaaa aaatcgagcg tcttaaatggc ggtttatcaa 6780
 aacctcttag aaaagtgcgg gattcgatat tattaatggg cggggcgacc attattgac 6840
 ctcatacgat agcagttggg gacagacagt ttactgctg aacgtatttt agttgctggc 6900
 ctgccattcc tgatatcca gggagagaac atattatcag ttnctaaca agtgkktwt 6960

FIG. 22S (cont'd)

TCFEO" BEE5226D

```

ckgraagmsk wwmckaaaaws srwvgtgtc gtagggggtg gctatatgc tgttgagttt 7020
gcaggtattt ttcaaggggtt gggtagtgac attcatttat tgtatcgagg tgatttatatt 7080
ctaaagggat ttgatacgaga tgttcgtgaa ttactgcca gtgagatgat aaagaaagga 7140
gtaaatttac attttaatcg cagtgtttct gctattgaaa agcaagtgga tggtagccta 7200
ttagtgggat taactgatgg ctcaaccttg gaagtggata ctattatgta tggcacaggt 7260
ygaaaaccar rmmvvgaggs wyytggktyt ksawwrksc gctgtmaas krckyaaw 7320
gggaagcctt tycaagtnta actgakaayt ttcaaanca agcagaagcc wbtwtawttt 7380
aygcaagtwa ggggawtggtt aatagaccgg tatgncaatk aacvccaagt tgstctsggc 7440
tgaarggtat ggmcttaagc mcagctttta tattagtgc tmcagtggat taataanggt 7500
agattatggg ttttsgttgc cmagaaccgg ttttnttgc caamcccaan tatgggcacc 7560
gtaggttata gtgaagagcg gggcaagrgm wragtttgat acggtgbcgt tttadaaatr 7620
gatttttaaa ccagatgaag ncatacgctg agtgncttct tngatngagc ggactttttg 7680
tgaagtnwat tagtgancc aaacnmcag ataragtcac aggttgatc atggtaggcg 7740
ctcracgcgg gagaaatctt gntattgcca taaaggcagg agccaccaa gcagactttg 7800
atagcaccat aggtattcac cctacgggtg ccgaagagtt tgtgactatg agagagcctg 7860
cgtatatatt atagcaatag gccaaaggga gctacttgtt ttagtaaggc tttttttaca 7920
aatagtacca tcagataata taktgcggta gttacgttc yamtgaatca kcagtkgtma 7980
wakkagtcac atagcaygms gwrtkatasg kgkattcata yyrtrcawaa syaaykckgt 8040
cgtcgagggg yataatkctc akrataatat wrttcgasw cctgtysakk ccwaccacr 8100
satacywssc aaagarttgy agtratcrag ckwtgsakws tgamcngtgs matnakgttc 8160
aacgcatgkc ccagcctkat agcatcygac caytsagggc caawrkmgmt taaycccagt 8220
gtwcngttns atrnrsgacs mgktaatggg mggtgwtst wrkawgccsg mtctmmaaa 8280
mmsanngmr acgtacaagm rtgwcaccmg krkgcytrya snmattmgct atcamrcna 8340
yssrrgggkk ggycttmawa arargggcaa aaaaaaaaaa 8380

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FIG. 22S (cont'd)

SEQID NO: 11

Lys Leu Gly Asp Pro Ile Glu Val Glu Thr Leu Ala Glu Ser Phe Arg
 1 5 10 15

Val Tyr Thr Asp Lys Arg His Tyr Cys Ala Leu Gly Ser Val Lys Ser
 20 25 30

Asn Ile Gly His Leu Gly Val Gly Ala Gly Ile Ala Gly Val Thr Lys
 35 40 45

Val Leu Leu Ser Leu Gln His Arg Met Leu Pro Pro Thr Ile His Cys
 50 55 60

Glu Asp Val Asn Pro Gln Ile Ala Leu Gln Gly Ser Pro Phe Tyr Ile
 65 70 75 80

Asn Thr Glu Leu Lys Pro Trp Gln Ser Gly Asp Gly Ile Pro Arg Arg
 85 90 95

Ala Gly Val Ser Ser Phe Gly Val Ser
 100 105

FIG. 22T

Lys Leu Gly Asp Pro Ile Glu Val Glu Thr Leu Ala Glu Ser Phe Arg SEQ ID NO:12
 1 5 10 15
 Val Tyr Thr Asp Lys Arg His Tyr Cys Ala Leu Gly Ser Val Lys Ser
 20 25 30
 Asn Ile Gly His Leu Gly Val Gly Ala Gly Ile Ala Gly Val Thr Lys
 35 40 45
 Val Leu Leu Ser Leu Gln His Arg Met Leu Pro Pro Thr Ile His Cys
 50 55 60
 Glu Asp Val Asn Pro Gln Ile Ala Leu Glu Gly Ser Pro Phe Tyr Ile
 65 70 75 80
 Asn Thr Glu Leu Lys Pro Trp Gln Ser Gly Asp Gly Ile Pro Arg Arg
 85 90 95
 Ala Gly Val Ser Ser Phe Gly Val Ser Gly Thr Asn Ala His Leu Val
 100 105 110
 Leu Glu Glu Tyr Thr His Arg Val Thr Ser Pro Leu Gln Asn Thr Ile
 115 120 125
 Leu Pro Gln Asn Gly Leu Phe Ile Val Pro Leu Ser Ala Lys Asn Asp
 130 135 140

FIG. 22U

Glu Cys Leu Asn Ala Cys Val Glu Arg Leu Leu Phe Phe Leu Lys Ser	160
145	155
Arg Gln Ser Asp Thr Tyr Lys Lys Tyr Ser Leu Ser Asp Thr Ala Pro	175
165	170
Ile Leu Leu Asp Leu Ala Tyr Thr Leu Gln Val Ser Arg Glu Ala Met	190
180	185
Thr Lys Arg Val Ala Phe Val Val Lys Thr Thr Ile Glu Leu Met Glu	205
195	200
Lys Leu Asn Ala Phe Ile Glu Lys Lys Gln Asn Thr Ile Lys Ala Ser Asn	220
210	215
Ile Lys Gly Cys Tyr Tyr Ser Ser Thr Lys Thr Ser Ser Pro Phe Asp	240
225	230
Asn Glu Ser Thr Asp	245

FIG. 22U (cont'd)

Arg Leu Gly Asp Pro Ile Glu Leu Ala Ala Leu Ser Lys Ala Phe Glu SEQID NO:14
 1 5 10 15
 Glu Gly Thr Gln Arg Lys Gln Phe Cys Gly Ile Gly Ser Val Lys Ser
 20 25 30
 Asn Ile Gly His Leu Asp Val Ala Ala Gly Val Val Gly Leu Ile Lys
 35 40 45
 Thr Ala Leu Ser Leu Gln His Arg Leu Leu Pro Pro Thr Ile Asn Tyr
 50 55 60
 Glu Ala Pro Asn Arg Glu Ile Asn Phe Glu Gln Ser Pro Phe His Val
 65 70 75 80
 Ile Asp Glu Leu Thr Glu Trp Arg Gly Gln Gly Pro Leu Arg Ala
 85 90 95
 Gly Val Ser Ser Phe Gly Ile Gly
 100

FIG. 22V

Gln Leu Gly Asp Pro Ile Glu Leu Gln Ala Leu Ala Asp Val Tyr Arg SEQID NO:16
 1 5 10 15
 Val Asp Asn Trp Arg Lys Asn Thr Cys Ala Leu Gly Ser Val Lys Ser
 20 25 30
 Asn Ile Gly His Thr Ser Ala Ala Ser Gly Val Ala Gly Ile His Lys
 35 40 45
 Val Leu Leu Ser Leu Lys His Arg Gln Leu Val Ala Ser Leu His Phe
 50 55 60
 Asn Ser Ala Asn His His Phe Asp Phe Gln Gln Ser Pro Phe Tyr Val
 65 70 75 80
 Asn Thr Gln Leu Arg Pro Trp Asp Gln Ala Glu Gly Leu Glu Ser
 85 90 95
 Arg Arg Arg Ala Ala Val Ser Ser Phe Gly Val Ser
 100 105

FIG. 22W

Glu Tyr Gly Asp Pro Met Glu Leu Thr Ala Ala Ala Val Phe Gly SEQID NO:18
 1 5 10 15
 Arg Gly Arg Asn Gln Lys Asn Arg Leu Val Gly Ser Val Lys Ala
 20 25 30
 Asn Ile Ser His Leu Glu Ala Ala Gly Gly Ile Ser Gly Leu Ile Lys
 35 40 45
 Ala Val Leu Ala Met Gln His Gly Val Ile Pro Gln Gln Leu His Cys
 50 55 60
 Lys Glu Pro Ser Pro His Ile Pro Trp Lys Arg Leu Pro Leu Asp Leu
 65 70 75 80
 Val Gln Glu Gln Thr Val Trp Pro Glu Ser Glu Glu Arg Ile Ala Ala
 85 90 95
 Val Thr Ala Ser Asp
 100

FIG. 22X

Gln Leu Gly Asp Glu Ile Glu Val Arg Ala Leu Ser Lys Val Tyr Gly SEQID NO:20
 1 5 10 15
 Asp Ser Gln Ser Thr Tyr Leu Gly Ala Val Lys Ser Asn Ile Gly
 20 25 30
 His Ala Asn Ala Gly Ala Gly Ile Ala Gly Phe Ile Lys Thr Val Leu
 35 40 45
 Ser Leu Tyr His Gly Lys Ile Ala Pro Asn Ala Gly Asn Thr Glu Pro
 50 55 60
 Asn Ala Ala Leu Asn Leu Asp Ala Phe His Phe Ala Leu Pro Lys Thr
 65 70 75 80
 Leu Leu Thr Trp Pro Glu Cys Asp Val Arg Arg Ala Ala Ile Ser Ser
 85 90 95
 Leu Gly Phe Gly
 100

FIG. 22Y

Ala Leu Gly Asp Pro Ile Glu Phe Gly Ala Ile Lys Ala Val Tyr Gly SEQID NO:22
 1 5 10 15
 Pro Gly Arg Ser Ser Pro Leu Val Leu Gly Ala Leu Lys Ser Asn Ile
 20 25 30
 Gly His Leu Glu Ala Thr Ala Gly Val Ala Ala Leu Ile Lys Ala Val
 35 40 45
 Leu Val Leu Gln His Gly Val Ala Pro Ala Asn Leu His Cys His Lys
 50 55 60
 Leu Asn Pro Leu Leu Asp Ile Asp Gly Phe Asn Val Val Phe Pro Gln
 65 70 75 80
 Ser Glu Thr Pro Leu His Ser Ser Leu Gln Leu Leu Gly Gly Tyr Gln
 85 90 95
 Phe Val Arg Val Trp
 100

FIG. 22Z

Thr Trp Xaa Ser Leu Leu Arg Trp Gly Leu Leu Gln Asn His Phe Asp
 1 5 10 15
 Pro Tyr Thr Glu Lys Lys Asn Tyr Cys Ala Ser Gly Ser Val Lys Ser
 20 25 30
 Asn Ile Gly His Leu Thr Ala Ala Gly Val Ser Gly Val Val Lys Val
 35 40 45
 Leu Leu Ala Leu Lys His Lys Gln Leu Pro Pro Ser Cys His Leu Val
 50 55 60
 Lys Ile Asn Glu His Ile Asn Leu Glu Asp Ser Pro Phe Tyr Ile Asn
 65 70 75 80
 Thr Ala Leu Lys Lys Trp Glu Val Ser Glu Gly Glu Ala Arg Arg Ala
 85 90 95
 Ala Val Ser Ser Phe Gly Ser
 100

FIG. 22AA

Pro Leu Gly Asp Pro Ile Glu Met Ala Ala Leu Lys Gln Ala Phe Gly SEQID NO:24
 1 5 10 15
 Thr Gln Lys Lys Lys Tyr Cys Ala Ile Gly Ser Val Lys Ser Asn Ile
 20 25 30
 Gly His Ala Asp Thr Ala Ala Gly Val Ala Gly Leu Ile Lys Thr Val
 35 40 45
 Met Ala Leu Lys Ala Arg Gln Ile Pro Pro Ser Leu His Phe Glu Thr
 50 55 60
 Pro Asn Pro Gln Ile Asp Phe Ala Asp Ser Pro Phe Tyr Val Asn Thr
 65 70 75 80
 Thr Leu Lys Asp Trp Asn Thr Asn Gly Val Pro Arg Arg Ala Gly Val
 85 90 95
 Ser Ser Phe Gly Ile Gly
 100

FIG. 22BB

Val Val Gly Asp Pro Ile Glu Val Val Gly Leu Thr Lys Ala Tyr Gln SEQID NO:28
 1 5 10 15
 Ala His Thr Gln Glu Arg Gln Tyr Cys Gly Leu Gly Ser Val Lys Thr
 20 25 30
 Asn Ile Gly His Thr Asp Ser Ala Ala Gly Ile Ala Gly Leu Leu Lys
 35 40 45
 Ile Val Met Ala Met Lys His Arg Gln Leu Pro Pro Ser Leu Asn Phe
 50 55 60
 Glu Thr Pro Asn Pro Asp Leu Asp Leu Glu Asn Ser Pro Phe Phe Ile
 65 70 75 80
 Gln Thr Lys Leu Lys Asp Trp Glu Ser Val Gly Pro Arg Arg Ala Ala
 85 90 95
 Leu Ser Ser Phe Gly Leu Gly
 100

FIG. 22CC

Met Val Val Glu Glu Phe Phe Val Ser Tyr Arg Asp Ile Leu Lys SEQID NO:38
1 5 10 15
Ala Leu Gln Asp Glu Lys Ile Ser Phe Glu Glu Ala Lys Tyr Lys Leu
20 25 30
Ile Lys Arg Lys Asp Lys Lys Ser Lys Gln Arg Leu Asn His Asp Arg
35 40 45
Glu Leu Asn Arg Ser Met Asn Ile Thr Pro Lys Ile Val Asn Asn Tyr
50 55 60
Gly Leu Val Leu Leu Gly Gly His Leu Phe Glu Glu Leu Arg Leu Ser
65 70 75 80
Glu Trp Lys Ala Ala Asn Pro Asn Pro Asn Glu Val Ser Ile Gln Val
85 90 95
Lys Ala Ser Ala Ile Ser Phe Thr Asp Thr Leu Cys Val Gln Gly Leu
100 105 110
Tyr Pro Ser His Tyr Pro Phe Val Pro Gly Phe Glu Val Ser Gly Val
115 120 125
Ile Arg Gln Val Gly Glu His Ile Thr Asp Leu His Val Gly Asp Glu
130 135 140

Val Ile Ala Phe Thr Gly Ser Ser Met Gly Gly His Ala Tyr Val	145	150	155	160
Thr Val Pro Gln Asp Tyr Val Val Arg Lys Pro Lys Asp Leu Ser Phe	165	170	175	
Glu Asp Ala Cys Ser Phe Pro Leu Ala Phe Ala Thr Val Tyr His Ser	180	185	190	
Phe Ala Arg Gly Lys Leu Ser His Asn Asp His Ile Leu Ile Gln Thr	195	200	205	
Ala Thr Gly Gly Cys Gly Leu Met Ala Leu Gln Leu Ala Arg Leu Lys	210	215	220	
Gln Cys Val Cys Tyr Gly Thr Ser Ser Arg Glu Asp Lys Leu Ala Leu	225	230	235	240
Leu Lys Gln Trp Ala Leu Pro Tyr Val Phe Asn Tyr Lys Thr Cys Asn	245	250	255	
Ile Asp Glu Glu Ile Gln Arg Val Ser Gly His Arg Gly Val Asp Val	260	265	270	
Val Leu Asn Met Leu Pro Gly Glu His Ile Gln Gln Gly Leu Asn Ser	275	280	285	

Leu Ala Lys Gly Gly Arg Tyr Leu Glu Leu Ser Met His Gly Leu Leu
 290 295 300
 Thr Asn Glu Pro Val Ser Leu Ser Ser Leu Arg Phe Asn Gln Ser Val
 305 310 315 320
 Gln Thr Ile Asn Leu Leu Gly Leu Leu Asn Lys Gly Asp Asp Gly Phe
 325 330 335
 Ile Gly Ser Val Leu Ala Gln Met Val Ser Trp Ile Glu Ser Gly Asp
 340 345 350
 Leu Val Ser Thr Val Ser Arg Ile Tyr Pro Leu Asp Gln Ile Gly Glu
 355 360 365
 Ala Leu Arg Tyr Val Ser Glu Gly Glu His Ile Gly Lys Val Val Val
 370 375 380
 Ser His Thr Ala Thr Glu Pro Met Asp Cys Arg Gln Arg Cys Ile Asp
 385 390 395 400
 Asn Val Leu Lys Gln Gly Gln Met Ala Ala Leu Thr Ala Thr Gly Gly
 405 410 415
 Lys Ser Arg Val Trp Gly Gly Thr Gly Val Asn Asp Lys Pro Ser Pro
 420 425 430

FIG. 22DD (cont'd)

Ala Val Gly Ile Glu Glu Arg Leu Glu Gly Ile Ala Val Ile Gly	435	440	445
Leu Ser Gly Gln Tyr Pro Lys Ser Lys Thr Leu Glu Gln Phe Trp Gln	450	455	460
Thr Leu Ala Asp Gly Val Asp Cys Ile Ser Glu Ile Pro Ala Asp Arg	465	470	475
Trp Ser Leu Glu Glu Tyr Tyr Ser Pro Ile Pro Glu Gly Lys Thr	485	490	495
Tyr Cys Lys Trp Met Gly Val Leu Glu Asp Met Asp Cys Phe Asp Pro	500	505	510
Leu Phe Phe Ala Ile Ser Pro Arg Glu Ala Glu Val Met Asp Pro Gln	515	520	525
Gln Arg Leu Phe Leu Glu Asn Ala Trp Ser Cys Ile Glu Asp Ala Gly	530	535	540
Ile Asn Pro Lys Met Leu Ser Arg Ser Arg Cys Gly Val Phe Val Gly	545	550	555
Cys Gly Ala Asn Asp Tyr Ser Ala Leu Met Asn Ser Ser His Ser Thr	565	570	575

Ser	Leu	Glu	Leu	Met	Lys	Glu	Leu	Gly	Asn	Asn	Ser	Ser	Ile	Leu	Ser	
		580						585						590		
Ala	Arg	Ile	Ser	Tyr	Phe	Leu	Asn	Leu	Lys	Gly	Pro	Cys	Leu	Ala	Ile	
		595					600					605				
Asp	Thr	Ala	Cys	Ser	Ser	Ser	Leu	Val	Ala	Ile	Ala	Glu	Ser	Cys	Asn	
		610				615					620					
Ser	Leu	Val	Leu	Gly	Thr	Ser	Asp	Leu	Ala	Leu	Ala	Gly	Gly	Val	Leu	
		625				630				635					640	
Leu	Met	Pro	Gly	Pro	Ser	Leu	His	Ile	Gly	Leu	Ser	His	Gly	Glu	Met	
				645					650					655		
Leu	Ser	Val	Asp	Gly	Arg	Cys	Phe	Thr	Phe	Asp	Gln	Arg	Ala	Asn	Gly	
			660					665					670			
Phe	Val	Pro	Gly	Glu	Gly	Val	Gly	Val	Val	Leu	Leu	Lys	Arg	Met	Ser	
		675					680					685				
Asp	Ala	Val	Arg	Asp	Gly	Asp	Pro	Ile	Arg	Ala	Val	Ile	Arg	Gly	Trp	
		690				695					700					
Gly	Val	Asn	Gln	Asp	Gly	Arg	Ser	Asn	Gly	Ile	Thr	Ala	Pro	Ser	Ser	
		705				710				715					720	

Lys	Ala	Gln	Ser	Ala	Leu	Glu	Gln	Glu	Val	Tyr	Gln	Arg	Phe	Asn	Ile	
																735
																725
Asp	Pro	Ser	Ser	Ile	Thr	Leu	Val	Glu	Ala	His	Gly	Thr	Gly	Thr	Lys	
																740
																745
Leu	Gly	Asp	Pro	Ile	Glu	Val	Glu	Ala	Leu	Ala	Glu	Ser	Phe	Arg	Val	
																755
																760
																765
Tyr	Thr	Asp	Lys	Arg	His	Tyr	Cys	Ala	Leu	Gly	Ser	Val	Lys	Ser	Asn	
																770
																775
																780
Ile	Gly	His	Leu	Gly	Val	Gly	Ala	Gly	Ile	Ala	Gly	Val	Thr	Lys	Val	
																785
																790
Leu	Leu	Ser	Leu	Gln	His	Arg	Met	Leu	Pro	Pro	Thr	Ile	His	Cys	Glu	
																805
																810
																815
Asp	Val	Asn	Pro	Gln	Ile	Ala	Leu	Glu	Gly	Ser	Pro	Phe	Tyr	Ile	Asn	
																820
																825
																830
Thr	Glu	Leu	Lys	Pro	Trp	Gln	Ser	Gly	Asp	Ser	Ile	Pro	Arg	Arg	Ala	
																835
																840
																845
Gly	Val	Ser	Ser	Phe	Gly	Phe	Ser	Gly	Thr	Asn	Ala	His	Leu	Val	Leu	
																850
																855
																860

Glu	Glu	Tyr	Leu	Pro	His	Ser	Thr	Gly	Thr	Ile	Glu	Ser	Phe	Ala	Ala	
865					870					875					880	
Asn	His	Ala	Ser	Thr	Val	Ile	Ile	Pro	Leu	Ser	Ala	Lys	Ser	His	Asn	
				885					890						895	
Ser	Leu	Tyr	Thr	Tyr	Ala	Gln	Thr	Leu	Leu	Ile	Phe	Leu	Lys	Arg	Ser	
				900					905						910	
Gln	Val	Thr	Asp	Ala	Lys	Lys	Ile	Thr	Ile	Asp	His	Met	Glu	Cys	Arg	
			915						920						925	
Leu	Leu	Asp	Leu	Ala	Tyr	Thr	Leu	Gln	Val	Gly	Arg	Glu	Ala	Met	Asp	
			930						935						940	
Lys	Arg	Ile	Ser	Phe	Ile	Val	Asn	Thr	Lys	Gln	Ala	Leu	Val	Glu	Lys	
					950							955			960	
Leu	Asn	Ala	Phe	Leu	Glu	Lys	Glu	Lys	Thr	Ile	Thr	Asp	Cys	Tyr	His	
				965						970					975	
Tyr	Leu	Phe	Asp	Ser	Asp	Lys	Pro	Ser	Thr	Glu	Ile	Phe	Arg	Leu	Asp	
				980						985					990	
Glu	Asp	Asp	Lys	Val	Leu	Ile	Asn	Ser	Trp	Ile	Ser	Gln	Ser	Gln	Tyr	
			995												1000	
															1005	

FIG. 22DD (cont'd)

His Lys Leu Ala Glu Ala Trp Ser Gln Gly Leu Asp Ile Asp Trp Thr
1010 1015 1020

Leu Leu Tyr Thr His Ser Ser Thr Pro Arg Arg Ile Ser Leu Pro Thr
1025 1030 1035 1040

Tyr Pro Phe Ala Arg Asp Arg Tyr Trp Leu Pro Glu Lys Pro Arg Tyr
1045 1050 1055

Asn Ala Ala Asn His Pro Val Ser Asn His Gln Thr Thr Thr Gln Asn
1060 1065 1070

His Ser Arg Phe Ala Ile Asp Thr Asp His Asp Val Val Ala Glu Ile
1075 1080 1085

Met Gln Lys Thr His Gln Gln Glu Leu Glu Gln Trp Leu Lys Leu
1090 1095 1100

Leu Phe Val Gln Leu Gln His Met Gly Leu Phe Gln His Arg Val Phe
1105 1110 1115 1120

Glu Thr Ala Thr Ala Leu Arg Gln Ser Ala Gly Ile Val Asp Lys Tyr
1125 1130 1135

Asp Arg Trp Trp His Glu Cys Leu Ser Val Leu Gln Asp Ala Gly Tyr
1140 1145 1150

FIG. 22DD (cont'd)

Leu Glu Trp Lys Asp Asp Ser Val Ala Ala Gln Ala Leu Glu Ser
 1155 1160 1165
 Glu Ser Gln Glu Ala Trp Trp Ser Arg Trp Asn Thr Glu Tyr Lys His
 1170 1175 1180
 Tyr Gln Asn Asp Pro Glu Lys Lys Thr Leu Ala Ile Leu Ile Asn Asp
 1185 1190 1195 1200
 Cys Leu Gln Ala Leu Pro Gly Val Leu Ser Gly Glu Gln Leu Ile Thr
 1205 1210 1215
 Asp Ile Ile Phe Pro Asn Gly Ser Met Glu Lys Met Glu Gly Leu Tyr
 1220 1225 1230
 Lys Asn Asn Arg Ile Ala Asp Tyr Cys Asn Gln Cys Val Gly Asp Leu
 1235 1240 1245
 Leu Val Gln Phe Ile Glu Ala Arg Leu Ser Arg Asp Ala Asn Ala Arg
 1250 1255 1260
 Ile Arg Ile Ile Glu Ile Gly Ala Gly Thr Gly Gly Thr Thr Ala Ile
 1265 1270 1275 1280
 Val Leu Pro Met Leu Gln Ala Tyr Gln Asp His Ile Asp Thr Tyr Cys
 1285 1290 1295

FIG. 22DD (cont'd)

Tyr Thr Asp Val Ser Lys Ala Phe Leu Met His Gly Gln Glu His Tyr
 1300 1305 1310
 Gly Glu Gln Tyr Pro Tyr Leu Ser Tyr Cys Leu Cys Asn Ile Glu Gln
 1315 1320 1325
 Asp Leu Val Ala Gln Gly Ile Ser Val Gly Asp Tyr Asp Ile Ala Ile
 1330 1335 1340
 Ala Ala Asn Val Leu His Ala Thr Arg Asn Ile His Glu Thr Val Ser
 1345 1350 1355 1360
 His Val Arg Gln Ala Leu Ala Ala Asn Gly Leu Leu Ile Leu Asn Glu
 1365 1370 1375
 Phe Ser Gln Lys Ser Val Phe Ser Ser Val Ile Phe Gly Leu Ile Asp
 1380 1385 1390
 Gly Trp Ala Leu Ser Glu Asp Thr Gly Leu Arg Ile Pro Gly Ser Pro
 1395 1400 1405
 Gly Leu Tyr Pro Lys Gln Trp Gln Ala Val Leu Glu Ala Ser Gly Phe
 1410 1415 1420
 Gly Asp Val Glu Phe Pro Leu His Asp Ala Arg Glu Leu Gly Gln Gln
 1425 1430 1435 1440

FIG. 22DD (cont'd)

Ile Ile Leu Ala Thr Asn Ala His Ala Asn Val Ala Ser Asp Leu Ala
1445 1450 1455

Thr Ser Val Ile Asp His Ala Pro Lys Arg Leu Pro Ser Ala Glu Val
1460 1465 1470

Ser Met Asp Glu Arg Val Ser His Asp Ala Met Met Lys Ala Ser Val
1475 1480 1485

Lys Gln Leu Leu Val Glu Gln Leu Ser Gln Ser Leu Lys Leu Asp Met
1490 1495 1500

Asn Glu Ile His Pro Asp Glu Ser Phe Ala Asp Tyr Gly Val Asp Ser
1505 1510 1515 1520

Ile Thr Gly Ala Ser Phe Ile Gln Gln Leu Asn Asp Thr Leu Thr Leu
1525 1530 1535

Thr Leu Lys Thr Val Cys Leu Phe Asp His Ser Ser Val Asn Arg Leu
1540 1545 1550

Thr Ala Tyr Leu Leu Ser Asp Tyr Gly Asp Asp Ile Ala Gln Trp Leu
1555 1560 1565

Ala Thr Ala Pro Ala Leu Val Asp His Pro Gln Ser Val Val Ser Gln
1570 1575 1580

Val Leu Pro Glu Arg Ser Pro Ala Ser Thr Gln Ala Lys Pro Leu Pro
1585 1590 1595 1600

Ser Val Pro Pro Ser Leu Ser Met Glu Ser Pro Val Gln Gln Glu Ser
1605 1610 1615

Ile Ala Ile Ile Gly Met Ser Gly Arg Phe Ala Ala Ser Glu Asn Leu
1620 1625 1630

Glu Ala Phe Trp Gln Gln Leu Ala Gln Gly Val Asp Leu Val Glu Pro
1635 1640 1645

Ala Ser Arg Trp Gly Pro Gln Ala Glu Thr Tyr Tyr Gly Ser Phe Leu
1650 1655 1660

Lys Asp Met Asp Gln Phe Asp Pro Leu Phe Phe Asn Leu Ser Gly Val
1665 1670 1675 1680

Glu Ala Ser Tyr Met Asp Pro Gln Gln Arg Cys Phe Leu Glu Glu Ser
1685 1690 1695

Trp Asn Ala Leu Glu Asn Ala Gly Tyr Val Gly Asp Gly Ile Glu Gly
1700 1705 1710

Lys Arg Cys Gly Ile Tyr Ala Gly Cys Val Ser Gly Asp Tyr Ala Gln
1715 1720 1725

Leu Leu Gly Asp Gln Pro Pro Gln Ala Phe Trp Gly Asn Ala Ser
 1730 1735 1740
 Ser Ile Ile Pro Ala Arg Ile Ala Tyr Tyr Leu Asn Leu Gln Gly Pro
 1745 1750 1755 1760
 Ala Thr Ala Val Asp Thr Ala Cys Ser Ser Ser Leu Val Ala Val His
 1765 1770 1775
 Leu Ala Cys Gln Ala Leu His Leu Asp Glu Met Glu Met Ala Leu Ala
 1780 1785 1790
 Gly Gly Val Ser Leu Tyr Pro Thr Pro Ile Ile Val Glx Val Phe Ala
 1795 1800 1805
 Trp Cys Arg Tyr
 1810

FIG. 22DD (cont'd)